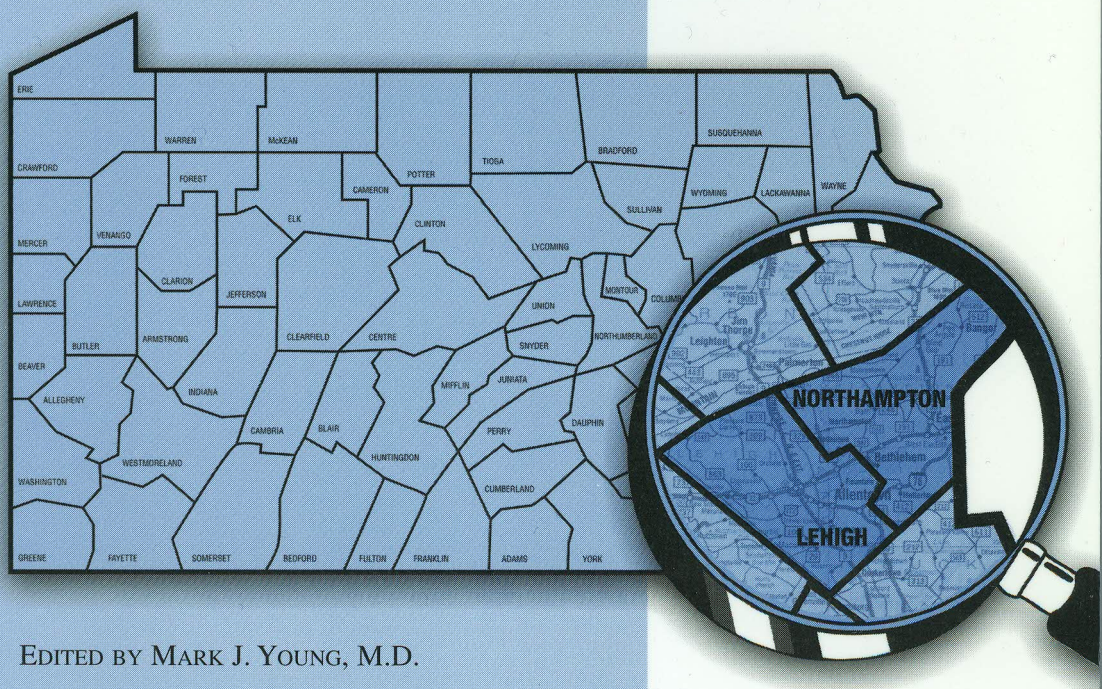
Focus on Community Health Improvement Initiatives in the Lehigh Valley.

Lehigh Valley Health Network

Focus on Community Health Improvement Initiatives in the Lehigh Valley

From Measurable Enhancement of the Status of Health (MESH) to Coalition Building



EDITED BY MARK J. YOUNG, M.D.

A Collaborative Effort of:

- *Lehigh Valley Hospital and Health Network*
- *Dorothy Rider Pool Health Care Trust*
- *The Institute for Healthy Communities*
  an Affiliate of The Health Alliance of Pennsylvania

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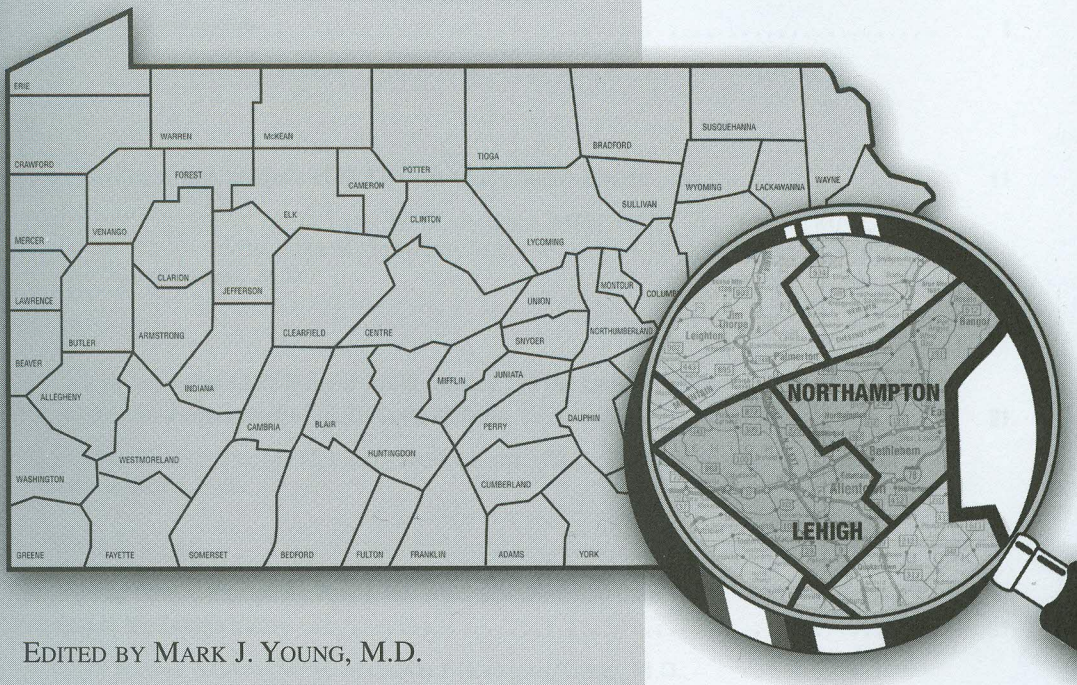

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Focus on Community Health Improvement Initiatives in the Lehigh Valley:

From Measurable Enhancement of the Status of Health (MESH) to Coalition Building

PART THREE: Tools & Strategies for Engaging Health Care

THE HOSPITAL & HEALTHSYSTEM ASSOCIATION OF PENNSYLVANIA

THE INSTITUTE FOR HEALTHY COMMUNITIES
An Affiliate of The Health Alliance of Pennsylvania

Achieving the Community Health Vision

Leadership is often tested by how well it grapples with and overcomes challenges. As the leaders of hospitals and health systems confront multiple challenges, successful examples reveal that practical solutions, measurable outcomes, and effective strategies become increasingly important. Health care continues to undergo significant changes, creating major challenges in financing, human resources, public accountability, and designing delivery systems for the future. The current environment demands visionary leadership and a willingness to reach out and explore creative approaches to partner with all sectors of the community. *Focus on Community Health Improvement Initiatives in the Lehigh Valley* is a testament to the visionary and comprehensive efforts of Lehigh Valley Hospital and Health Network and their community partners to enhancing health status and building a healthier community. Through both its scope and depth, leaders should regard this collection of articles as a clear demonstration of the benefits of collaboration, both within and beyond the walls of health care organizations.

The Hospital & Healthsystem Association of Pennsylvania (HAP) and its strategic partner, The Institute for Healthy Communities, are committed to Vision 21st Century which states that *health care in Pennsylvania must focus on patients and the communities in which they live*. The vision reflects the growing interest in health care to focus on providing high quality medical care and acting decisively to prevent disease while partnering with the community to educate and encourage healthy life choices. Through successful partnerships, health care organizations can participate in a wide range of activities to improve the health status of patients. The commitment to fulfilling Vision 21st Century supports an overarching collaborative approach: that delivering health care services to patients must occur in tandem with broad-based initiatives to improve overall community health. Making a connection with the community, by building partnerships to revitalize social capital that improves health status and quality of life, takes health care organizations even closer to providing quality services and maximizing prevention.

Lehigh Valley Hospital and Health Network and its partners are leading the way as they approach a common vision—building a healthier community. The benefits of their research, pointing the way to demonstrating the value of collaboration and achieving measurable outcomes, is a significant landmark in our efforts to address current challenges. Our hope is that *Focus on Community Health Improvement Initiatives in the Lehigh Valley* will assist health care and community leaders and their partners in realizing the vision of a health care system that focuses on patients and the communities in which they live.

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MESH: Measurable Enhancement of the Status of Health – A Leadership Perspective

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Introduction

The purpose of this monograph is to reflect upon and learn from our hospital's commitment to the community's health. In May of 1998, we published an article in the journal *Academic Medicine* describing how Lehigh Valley Hospital used an approach called Measurable Enhancement of the Status of Health (MESH) to create and operate its new Department of Community Health and Health Studies and associated programs to benefit the community. That article summarized our efforts from 1995 to 1997, and the key points from it are included here.

Since 1997, the healthcare sector has undergone tremendous change. Financial pressures are the most obvious challenge facing hospitals in Pennsylvania and nationally. The Allegheny Health, Education and Research Foundation bankruptcy and the financial losses at the University of Pennsylvania Health System are highly visible examples; but three-quarters of Pennsylvania hospitals have negative margins from their patient care operations. At Lehigh Valley Hospital and Health Network, the financial picture is similar: we have forecast the first loss from patient care operations in our hospital's 100-year history. Given such challenges, is it possible to sustain a hospital's commitment (beyond traditional patient care) to its community?

In this chapter we provide a status report, updating our community health improvement efforts to reflect the years 1998, 1999 and the first six months of 2000. We revisit and update the community health programs of the Department of Community Health and Health Studies and reflect on lessons learned about changes in the healthcare environment and their implications for community programs.

About our Hospital and its Department of Community Health and Health Studies

Lehigh Valley Hospital and Health Network serves a population of 550,000 in mid-eastern Pennsylvania. We provide a full continuum of services, from network-owned/affiliated primary care practices and ambulatory care sites to substantial tertiary care services (1,200 annual open heart surgeries, a Level 1 trauma program with burn center, and a Level III neonatal intensive care unit). Our educational programs train over 100 residents a year in internal medicine, surgery, family practice and obstetrics/gynecology. Our overall approach to linking education programs to the community as well as the development of our Family Practice residency is included in chapter 8. The hospital is also a member of PennCARE, an integrated delivery system that

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emphasizes the responsiveness of its member hospitals to the community. Finally, we have an important relationship with the Dorothy Rider Pool Health Care Trust, a supporting organization established to make LVH a superior regional hospital and thus improve the health of citizens of the Lehigh Valley. The Pool Trust has a longstanding commitment to the concepts of community health.

In 1995, we strengthened our relationship with the surrounding community by merging our departments of community health and clinical research to form the Department of Community Health and Health Studies. The Department comprises several community-based, prevention-oriented components developed in the 1980s and realigned as part of new initiatives in 1997. Specifically, when the Department was established its components were:

- ALERT Partnership
- Burn Prevention Foundation
- School Health Unit
- Coalition for a Smoke-Free Valley
- Center for Health Promotion and Disease Prevention
- Heath Studies Unit

In 1997, the Department began its MESH initiative (discussed in a later section) and added:

- AIDS Activities Office
- Helwig Diabetes Center

All of these programs are described, and their activities updated, below:

ALERT Partnership is a 160-member community coalition of representatives from education, prevention, law enforcement, health care, business and others in Lehigh and Northampton counties. ALERT seeks to prevent the illegal use and abuse of alcohol, tobacco and other drugs through a unified community effort.

Burn Prevention Foundation is a not-for-profit organization affiliated with Lehigh Valley Hospital and Health Network. The foundation develops and promotes methods to

- educate the public, especially those at greatest risk, about burn prevention;
- encourage an exchange of knowledge about burns among healthcare professionals, paraprofessionals and first responders;
- improve the quality of burn treatment in all settings;
- educate the public about effective utilization of burn treatment centers.

Coalition for a Smoke-Free Valley is a broad-based community group established with the goal of reducing the number of adult smokers by 5% by the year 2000. Coalition members plan, coordinate and implement prevention, cessation, media and policy activities directed toward this goal.

> ***Update 2000*** — Since 1997, the ALERT Partnership, Burn Prevention Foundation and Coalition for a Smoke-Free Valley have made the transition to becoming more independent organizations. Although the hospital continues to support them with space, payroll and technical assistance, direct hospital financial support ceased as of July, 2000. It is a measure of the leadership of these entities that they continue to attract external funding and community support. Within the Department of Community Health and Health Studies, they are considered partner organizations, participating in strategic planning and program development. Where appropriate, they may receive contracts for services within their competencies. *(Reflections on the first ten years of the ALERT Partnership and the Coalition for a Smoke-Free Valley can be found in Chapters 11 and 12 of this monograph.)*

Center for Health Promotion and Disease Prevention seeks to improve the health status of citizens of the Lehigh Valley by providing services that reduce health risks and prevent disease. The Center offers classes, lectures, workshops, conferences, small-group sessions, screenings, counseling and self-help materials to community members, patients, business and industry, hospital employees and area

physicians. Subjects include smoking cessation, weight control, cholesterol reduction, stress management, hypertension reduction and aerobic fitness.

Helwig Diabetes Center provides specialized education, care and support to diabetes patients and their families. It was integrated into the Center for Health Promotion and Disease Prevention to better emphasize the importance of prevention in clinical conditions such as diabetes.

> ***Update 2000*** — In 1999, we solidified the future of these two programs by aligning them with a major network initiative in Circulatory Services. The transition reflects an increased focus on disease management and financial accountability. In another, related chronic disease area, the Department developed a new grant-funded program titled LOVAR (Lowering of Vascular Atherosclerotic Risk). *(See Chapter 5 for detailed information.)*

AIDS Activity Office is a team of clinicians, nurses, case managers, dietitian and administrative staff educated and experienced in the care of people infected with or affected by HIV. The team provides medical care, health education, nutrition interventions, psychosocial assessments, case management and emotional support. They continually assess available services and work to address identified gaps in collaboration with Lehigh Valley Hospital and the community.

School Health Unit manages the Central Elementary School clinic, in which a nurse and pediatrician from Lehigh Valley Hospital work with school nurses and teachers. Together they address problems encountered by children of low-income families that can hamper students' ability and readiness to learn. The unit also coordinates other Lehigh Valley Hospital services offered to the Allentown School District.

> ***Update 2000*** — These two programs are administered as the Health Care Initiatives of the Department. There is closer integration of both programs with clinical departments. The AIDS Activities Office has experienced substantial growth due to a growing patient population resulting in successful attainment of increased federal funding. The hospital has maintained its core support of School Health but growth will require external funding.

Health Studies Unit is a measurement and evaluation team including health services researchers, biostatisticians, epidemiologists and a support team for data entry and analysis. Health Studies also supports the writing and editing of manuscripts for peer-reviewed publication, and encourages and assists staff physicians, nurses, residents and students with clinical and community research on health issues. The Health Studies Unit reflects the Department's commitment to measurement and evaluation, and the hospital's commitment to clinical excellence as a component of our responsibility to the community we serve.

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

Lehigh Valley Hospital's success in structuring its community health improvement efforts is a model that needs replicating by other health care systems. The initiative combines operating principles from two perspectives that can appear to be at odds with one another: the quantitative, measurement focus of performance monitoring and outcomes assessment, and the more qualitative capacity building and empowerment philosophies of community health. This is state-of-the-art public health practice, where community ownership, continuous assessment for management, and cross-disciplinary contributions to prevention drive action plans and measurement of success. Two features struck me as critical to the success of Lehigh Valley's efforts: flexibility in defining relevant "outcomes" and steering towards institutional change to make improvements permanent. By allowing for the "discovery" of what is important to all collaborating partners, the process of community health improvement stays relevant and worthy of engagement. By coupling this discovery mode with sophisticated evaluation techniques, data on outcomes relevant for management and policy are also generated, enabling the maintenance of quality. The attention to the process the structure for community health improvement is built is another place where Lehigh Valley's initiative stands out. This focus strengthens the commitment to collaboration and assists organizational changes that will provide continuous support for community health improvement. By describing how things worked, we also can learn from Lehigh Valley Hospital's efforts and move towards replicating them. We can look forward to the next five years' results with great anticipation to see where this innovative process has gone.

Update 2000 — To head the Health Studies Unit, the Department recruited a national leader in health services research who also had strong roots in community pediatrics and public health. Dr. Lawrence C. Kleinman's initial priority has been to develop the infrastructure needed to support the work of Health Studies; in his first year the unit has tripled in staff, and more growth is planned. Health Studies now has seven doctoral-level staff in fields ranging from social psychology to biostatistics to health economics, and four staff at the masters level. Current work includes partnering with community organizations to evaluate their grant-funded activities; helping define process and outcome measures for evaluation of MESH and other community activities; and stimulating and conducting clinical research.

The MESH Initiative

In 1997, the Department began one of its most important initiatives: Measurable Enhancement of the Status of Health (MESH), a collaborative venture of Lehigh Valley Hospital and the Dorothy Rider Pool Health Care Trust. As its name indicates, MESH's main goals are to enhance and to measure change in the health status of Lehigh Valley residents. We recognize that achieving these goals will require a long-term investment of resources and effort on several levels.

Our approach consists of technical assistance to community partners to help them measure the outcomes of the services they deliver and to evaluate organizational change. In working to facilitate organizational as well as community change, MESH aims to test and refine theories and philosophies of community management, capacity-building and social action. Our initial work was a baseline assessment, using qualitative and quantitative measures, of the community's health needs. (A report on one of these assessments, using the Behavioral Risk Factor Surveillance System [BRFSS], can be found in Chapter 9.) Subsequent efforts have built on that initial process, and ongoing assessment will continue to guide MESH's work.

Update 2000 — Two of MESH's aims from the first were to strengthen the focus on desired outcomes and to integrate activities across component areas. In 1999 we undertook a "unified action planning" process, resulting in (1) departmental reorganization, (2) identification of target geographic and topic areas, and (3) specific pilot activities to address priority areas. We adopted the following mission statement:

"Through its MESH activities, the Department of Community Health and Health Studies supports community efforts related to health and quality of life. MESH serves as a resource and offers a variety of tools:

- means to assess the health and well-being of individuals, populations and the community.
- activities to improve health in priority areas: chronic disease, injury, child and family health, and community functioning.
- collaborations among organizations, health providers, public and private agencies.
- opportunities for community fellowship and problem-solving.
- ways to evaluate progress.

Using a broad definition of health, MESH consists of three interrelated components—not-for-profit, grassroots and clinical.

Not-For-Profit Component

This component of MESH provides seed funding, technical assistance and support to 28 agencies and two congregations in the two-county area of the Lehigh Valley. Projects address a wide range of issues and involve many age groups. Youth programs focus on health and fitness activities; art; wraparound services for children with behavioral problems; informational and emotional support for mothers of young children; and reduction of racial and ethnic prejudice in elementary school children. Other programs include the matching of individuals at risk for homelessness with appropriate congregations; health education in a senior center; an on-line community network for people with disabilities; collab-

orative training in theater and radio for community activism and personal development; and job matching for single parents and displaced homemakers. MESH provides ongoing financial and individual evaluation support for participating agencies, holds quarterly networking meetings, and maintains regular contact through a hospital staff member assigned to each agency.

Update 2000 – MESH supported and facilitated a 2-1/2 year process of collaborative planning and project implementation for participating not-for-profit organizations. This resulted in two collaboratives: Kids and Community Connection (KCC) and Community Exchange. During the next several years, we will work with KCC to develop specific projects related to physical fitness (chronic disease prevention) and injury prevention. KCC also plans to continue working as a group to address other interests. Community Exchange is developing a service-sharing and support network of individuals and organizations. MESH will help link this network with discharge planners, home care, and hospice in target geographic areas.

Grassroots Component

This MESH component aims to develop strategies, strengthen and focus resources, and build partnerships in selected communities to help them address priority issues. In the first phase of MESH, individuals and associations in several geographically distinct communities are using an action-oriented community development process to identify strengths and concerns. Priorities are being set and action plans designed through community forums and other meetings, qualitative interviews, asset mapping and other methods. Financial support comes in part from small grants, and MESH provides consultation and technical assistance.

> ***Update 2000 –*** In one rural area (population 12,000), MESH has held a series of community discussion suppers; attendance averaged 120. We have also been a partner in groups developing a community center and organizing activities around a community vision. A working group is developing health-related activities including walking trails and clubs and smoking prevention and cessation aimed at reducing cardiovascular risk.

Clinical Component

The goals of clinical MESH are to engage Lehigh Valley Health Network administrators, department chairs and clinicians in the development, implementation and evaluation of projects to enhance health services and health awareness in the community and to measure health-related outcomes. Initial efforts include the Vascular Medicine PORT (Prevention and Outcomes Research Team); primary and secondary cancer prevention activities; the Geriatrics Program for Excellence, designed to identify and treat delirium and depression in the elderly; a program to prevent motor vehicle trauma in both children and mature drivers; and a project to manage the care of people with HIV. Additional projects related to visiting scholars and to medical residents' research are coordinated through the hospital's Center for Educational Development and Support (see Chapter 6).

> ***Update 2000 –*** In a major collaborative effort through the Citizens for Children's Dental Health, MESH spearheaded fluoridation of the Allentown water supply. Future plans include additional activities to improve the dental health of children attending Central School.

Reflecting and Refining — Change and a Framework

As we reflect about how we adapt to change, we have found three concepts particularly helpful:

- Community – This is an inherent concept for an academic community hospital like ours; serving the community is the main component of our institution's mission.
- Complexity – This term refers not only to the complex business environment of health care, but also to formal complexity theory (a branch of chaos theory) and its application to organizational development.
- "Co-opetition" – This neologism is a combination of "collaboration" and "competition".

These three concepts are discussed in detail below. They are then summarized in Tables 1 and 2, which apply the concepts to changes in hospital issues from 1995 to 2000, and to the specific changes in Lehigh Valley Health Network's community health programs.

Change and Hospital Issues

Community

The importance of community has special implications for integrated delivery systems like PennCARE, the system in which our hospital participates. In their initial presentations to potential new members, PennCARE representatives emphasized the system's core commitment to populations in defined communities, a mission congruent with that of most community hospitals and definitely Lehigh Valley Hospital. PennCARE members' board of trustees have low turnover, which provides continuity and helps ensure that the community benefit mission is at the forefront of health care planning and operations. PennCARE fosters both the autonomy of communities and the inherent individuality of local concerns.

The most prominent manifestation of "community" for our system in 2000 is the successful implementation of sexual assault response teams across multiple PennCARE hospitals. We have developed standardized protocols across the network's emergency services for evaluating women who are possible rape victims.

For Lehigh Valley Hospital individually, the community connection is strongly evident in the area of philanthropy. As a reflection of our hospital's commitment to the community, we have become a major supporter of the United Way of the Greater Lehigh Valley. We increased the number of leadership gifts (individuals contributing $1,000 or more) from 6 in 1995 to 88 in 2000. Our community, for its part, has been generous in its philanthropic support of the hospital: in the last three years we have reached $34 million in gifts and pledges toward a $40 million capital campaign goal.

Complexity

The very structure and governance of PennCARE recognize complexity and emphasize the value of adaptability. Physicians must be flexible enough to function both at their individual hospitals and in the delivery system as a whole, and to maintain quality while at the same time reducing costs of care. For example, physicians develop risk-allocation principles across PennCARE, but are actually financially accountable only at their own hospital.

What has changed in the year 2000? The success of the PennCARE model is evident in clinically favorable, but financially unfavorable, results from the first three years of risk contracting for 100,000 lives. However, growth of full risk lives is stagnant, in part because the losses suffered by other integrated delivery systems have made managed care organizations and providers less enthusiastic about risk contracting. Similarly, the current backlash against managed care and withdrawal of some plans from managed Medicare have consequences which we view as unfortunate to communities. With less alignment of financial incentives and patient populations, it will be difficult to maintain programs in disease management and prevention.

Co-opetition

The idea of simultaneously collaborating and competing has been called "co-opetition". It is hard to collaborate in an environment of competition. We have worked hard to emphasize the cooperation dimension of "co-opetition" in our community programs. For example, we have submitted joint proposals for both local and national grant support. We have also clearly identified where our goals such as violence prevention and smoking cessation can build on strengths of some of our programs (ALERT and Coalition for a Smoke-Free Valley); in some cases we have specifically contracted for services such as training for physicians in smoking cessation that improve the care of patients. Another example is the

joint sponsorship of a grant that trains police officers to effectively intervene in family violence. For PennCARE, the concept applies to clinical program planning and the shared learning that takes place among member organizations. It is obvious from our regional referral relationships and the economies of scale we achieve through joint purchasing that collaboration takes place in PennCARE; but we also experience competition with all its benefits and drawbacks. For example, the market areas within PennCARE overlap, allowing both consumer choice and some duplication of services (e.g, more than one open heart program). This duplication of services coincided with the lapse of certificate of needs procedures in the state of Pennsylvania. In 2000, we are seeing an acceleration in competition, perhaps even hyper-competition. Coupled with the slow growth in covered lives, this is leading to less emphasis on cooperative prevention programs and continued pressure for each hospital to maximize reimbursement for acute services.

Lehigh Valley Hospital individually has also experienced co-opetition and hyper-competition in its region. We have participated in a collaborative Medicaid managed care program (Partnership Health Plan) and an effort to improve vaccination systems and other prevention-oriented projects in cooperation with competing hospitals (through the Partnership for Community Health). Local competition and changes in state policies have had major consequences. Partnership Health Plan, unable to develop a required expansion from two counties to 10, has ceased operations; and it is likely that the Partnership for Community Health will suffer a similar fate.

However, some things have not changed. In many organizations, medical education is not explicitly linked to the hospital's community mission. In our network, in contrast, this linkage is formally stated in the strategic plan for education (described in detail in Chapter 6). Similarly, our Family Practice Department has creatively implemented community-oriented primary care (described in Chapter 8).

Table 1 Change and Hospital Issues

	Hospital Issues, 1995	**Hospital Issues, 2000**
Community	Local hospitals in a larger network have a strong sense of their community mission.	Network implements sexual assault response teams across PennCARE; philanthropy successes at Lehigh Valley Hospital
Complexity	Governance of PennCARE maximizes local control but provides shared risk for managed care contracting.	Slowed growth in full risk capitation; less emphasis on population health.
"Co-opetition"	Hospitals compete in some communities but develop shared programs in some clinical areas.	Hyper-competition spurred by lapse of Certificate of Need.

Change and Community Health Programs

Community

For the Department, the concept of community strengthens not only the specific outreach programs we have previously initiated but also our linkage with the Dorothy Rider Pool Health Care Trust. The trust's resources have gone beyond financial contributions; through site visits and relations with other institutions at the state and national level, we have accelerated public and community learning.

Our departmental planning has benefited from the notions of community capacity and assets popularized by John McKnight. By recognizing that communities themselves have strengths, we in health care can avoid a mentality of "curing the community patient". In some instances our communities have social

service resources and neighborhood groups which are necessary partners if the hospital is to address health problems (such as violence) influenced by factors far outside the emergency and operating rooms.

How have things changed in 2000? We continue to focus on community, but are aligning our efforts more closely with hospital/clinical programs. For example, our tobacco cessation work continues through the policy activities of the Coalition for a Smoke-Free Valley, but we are also contracting to teach physicians how to decrease smoking by their patients. We have also aligned our hospital with community partners in the areas of family violence and exercise/nutrition programs to prevent cardiac disease. Over the past few years we have been active in preparing the hospital and the region for Medicaid managed care, especially as it relates to HIV/AIDS (see Chapter 5). And as mentioned in Chapter 10, our efforts to fluoridate the Allentown water supply have been largely successful thanks to our work with community colleagues. Generally, we find ourselves taking more of a leading role in the community regarding disease care and prevention, and a supporting role in community economic development.

Complexity

"Complexity" describes the Department's work well; for example, one program (the Burn Prevention Foundation) has 501(c)(3) status in its own right, while two others (the Coalition for a Smoke-Free Valley and the ALERT Partnership) have autonomous community boards. It is not simple to preserve the integrity of each program and to link the program's efforts to its own constituency. We meet as a department to promote learning across programs and to implement sharing among them whenever possible. In 2000, we have reorganized the Department in a way that recognizes the increasing autonomy (both financial and governance) of our components.

Co-opetition

As noted below in Table 2, we have found ways to collaborate rather than compete when seeking external grants:

Table 2 – Change and Community Health Programs

	Department of Community Health and Health Studies, 1995	**Department of Community Health and Health Studies, 2000**
Community	Department is formed based on strong history of partnership among early programs.	Continued focus on community, but also more alignment with hospital/clinical programs; fluoride.
Complexity	Components of Department identify more with community activities and sometimes find hospital procedures vexing.	Reorganization giving partners more autonomy.
"Co-opetition"	Units have overlapping goals but sometimes feel they are competing with each other for grants.	Multiple examples of grant collaboration.

Summary/Conclusions

In summary, Lehigh Valley Hospital has maintained its commitment to improving the health of citizens of our region. Despite the many challenges faced by all health care organizations, we believe that it is possible to meet those challenges. The stories and data that are encompassed in this monograph recognize individual programs and reinforce our leadership commitments. We also hope that we can also stimulate other hospitals in Pennsylvania and around the country to continue their efforts to serve individuals and their communities.

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A Documentation and Analysis of MESH Community Health Efforts

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Background

The MESH (Measurable Enhancement of the Status of Health) initiative began in 1996 as a unique endeavor to make a difference in the health of the Lehigh Valley. Three elements distinguish this from other collaborative efforts to improve population-level health outcomes:

- MESH defines improved health status broadly, to include individual health outcomes, social determinants of health, and environmental change (such as health-related community policies). For this reason, MESH developed clinical, not-for-profit and grassroots components.
- MESH is one of only a handful of broad-scale community-level initiatives in the nation involving a philanthropic organization (the Dorothy Rider Pool Health Care Trust), a health care organization (Lehigh Valley Hospital) and community partners. Several other initiatives in the United States are philanthropically funded and include paid external evaluation and technical assistance staff. MESH strategically invited community organizations to participate as partners with the grant-maker (Pool Trust) and the support organization (the Lehigh Valley Hospital Department of Community Health and Health Studies, or DCHHS). Even more unusual is that a community hospital—not the usual health bureau or regional or university-based public health department—is the lead partner in the effort.
- MESH's emphasis on measurement and continuing assessment imbeds a spirit of discovery, critical reflection, program improvement and accountability in all actions.

DCHHS began the evaluation project described here in November 1999, to better understand and improve our community health efforts. In part, the process responded to recommendations from an external site review in March 1999. As our measurement tool, we selected the documentation component from the Evaluation System for Community Initiatives developed by the Work Group for Health Promotion and

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Community Development at the University of Kansas (Francisco, Paine and Fawcett, 1993). This system has been used by local, regional and national initiatives to improve community health (Fawcett, Sterling TD, et al, 1995). Its documentation component is one of the few methods available for recording and synthesizing complex community initiatives like MESH. DCHHS's Health Studies Unit undertook the current study with the full cooperation, support and participation of MESH staff.

A primary component of the documentation system is the measurement of community change, in the form of new or modified programs, policies and practices. Research suggests that community change may be an intermediate predictor of a project's influence on more distant population-level outcomes (Fawcett, Lewis, et al, 1997; Paine-Andrews, Harris, et al, 1999). Documenting community change allows staff and grant-makers to identify, critique and improve their short-term efforts toward long-term change.

It is important to note that the documentation system does not evaluate the *effect* of individual community changes; that would require additional methods. Rather, the system classifies *attributes* of community change based on a working hypothesis of how community change may contribute to improvement in population health. Improvements in community-wide behavioral and health outcomes may be related to these specific attributes:

- ***amount*** of change (e.g., new changes or modifications within a specific period of time, goal and/or geographic area);
- ***duration*** of change (ongoing changes may be more influential than one-time events);
- penetration or exposure to relevant populations (e.g., did the change reach the whole population and/or groups with multiple risk factors), through multiple geographic areas, sectors and/or settings (e.g., schools, businesses and faith communities); and
- ***intensity*** of behavioral change strategy (changes that improve access to health services may be more powerful than changes that simply provide information about services).

A single community change—such as the decision to fluoridate Allentown's water (discussed in Chapter 10)—can occasionally have far-reaching impact. However, multifaceted change has a much better chance of doing so, as the following example illustrates. A partnership to promote childhood immunization is more likely to improve the community vaccination rate if it produces environmental change of greater ***amount*** (30-50 changes per year versus 5-10), ***duration*** (policies for regularly accessible vaccinations versus one-day vaccination services), ***intensity*** (removing barriers to vaccination services rather than just discussing the value of immunization), and ***penetration*** (changes within churches, schools and work sites, not just physician offices, to better reach neighborhoods with disproportionately low immunization rates).

The documentation system measures elements within the natural phase of work for community health initiatives. This framework or theory of action includes five components: (1) planning, (2) intervention and action, (3) community and systems change that result, (4) improved health-related behaviors, and (5) improved health outcomes (Fawcett, Paine-Andrews, et al, in press). This work is iterative – that is, feedback from previous work in any component should be reflected in future activities. The primary aim of this approach is to use data to inform program development and to produce desired outcomes.

Methods

In our case study of MESH we used two measurement procedures (the documentation system and interviews with key informants) to answer these three questions:

- What did MESH do to achieve its mission and objectives?
- How did MESH serve as a catalyst for change to improve community health?
- What contributed to MESH's role as a catalyst for community change?

1. Documentation System

The first step was to collect archived reports, meeting notes and other potentially important documents that included events or actions prior to January 2000. The study staff, with help from MESH and its participating organizations, requested any materials that might be potentially important in the development and implementation of MESH. We then reviewed the materials for events and actions which (1) were stimulated or facilitated by MESH, (2) actually occurred (i.e., were not just suggested or planned), and (3) related to one or more of the following documentation system categories:

1. **Community changes** — new or modified programs, policies or practices in the community facilitated and/or created by MESH that reduce risks for a targeted problem. Examples: a new child care program, a policy to fluoridate city water.
2. **Community actions** — actions by MESH and others to bring about a new or modified program, policy or practice. Examples: letters, phone calls and meetings designed to help effect a community change.
3. **Media** — coverage of MESH or its projects in print or broadcast media.
4. **Services provided** – MESH-related events designed to provide information or develop skills in the community. Examples: an evaluation skills workshop for staff of not-for-profit organizations, a community conference on the status of health indicators. *(The first time a service is provided we code it as a "community change," and all subsequent times as a "service provided.")*
5. **Planning products** — results or products of MESH planning activities. Examples: action plans, statements of objectives, formation of committees, hiring of new staff.
6. **Resources generated** — acquisition of funding for MESH, in the form of grants, donations or gifts in kind (such as people's time).
7. **Other** — items for which no code exists, such as internal staff meetings or phone calls to set up meetings. We attempted to exclude these items because accurately measuring them retrospectively is not feasible. We kept those events and actions deemed important to MESH development and implementation, labeling them "other" because they did not fit in the above categories.

Study staff entered each event into a database including the following information: (1) event date, (2) MESH program component (grassroots, clinical, not-for-profit, other), (3) a description of what happened and why it was important for MESH, (4) the individuals and organizations that helped create the event, (5) whether or not the event was new or newly modified, to distinguish "community changes," (6) the primary documentation system category for the event, and (7) the secondary documentation system category for the event. (If the event was a "service provided," we recorded the

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

Evidence based decision-making is now fundamental to public health practice. The growing pressure to use and generate reliable outcome data for program planning requires formal evaluation procedures to be built into service delivery, and measurement of outcomes that serve management purposes. Often, these outcomes do not include results that may be relevant to community partners, and some evaluation strategies may require research methods that are difficult in field settings. The MESH initiative has succeeded in employing key principles of evidence based management to community health programs by taking a comprehensive perspective on outcomes, using evaluation technology that is community friendly, and maintaining a focus on the developmental process itself. Empowerment and other community development models stress the need for community health programs to reflect outcomes of value to the community participants. Furthermore, all partners must contribute to the evaluation, so that the process of critical self-evaluation and learning is a shared experience. MESH accomplishes these goals, but succeeds further by using evaluation strategies that yield important "evidence" from beyond the traditional experimental paradigm. Here is a case study on how an emphasis on network-building, qualitative and quantitative descriptions of results, and tracking of "ripple effects" not only provide meaningful data for management decisions but also replication. This approach to assessing the outcome of a community health program is very different from the large scale experiments in community health, and one that seems to be much more rewarding.

number of participants or attendees; but we dropped this variable after discovering that it was not consistently available.)

If the event was categorized as a "community change," we recorded the following added variables: (1) how long the event was intended to last (one time, more than once, ongoing); (2) a description of the outcome or concern the event was intended to address; (3) which of 12 community sectors the event aimed to change (business/industry, civic/service organizations, college/university, government/law enforcement/fire, health care, media, neighborhood/grassroots, places of worship, school districts/schools, visual/theatrical arts, general community, other); (4) the population in which the intended outcome might occur (youth age 18 or younger, adults over age 18, community leaders, broader community, other); and (5) which of the following seven behavioral change strategies were employed:

1. **Providing information** — an event intended to increase knowledge
2. **Developing skills** – an event teaching a new competency or ability, or improving skills
3. **Building collaboration/recruiting support** — an event creating new joint work and/or gaining support for MESH from gatekeepers or others in power or authority
4. **Changing incentives/disincentives** – an event modifying or creating new consequences (e.g., praise and recognition; human, financial or material resources) for the purpose of improving a target behavior
5. **Providing feedback on goal progress** — an event giving public or private information on progress/performance
6. **Creating opportunities and facilities** – an event creating a new or modifying an existing occasion, program or service to give people a chance to directly participate in MESH's mission
7. **Changing the physical design of the environment** – an event modifying the physical structure of the environment to promote desired outcomes

The categories of behavioral change strategies were adapted by those developed by the Work Group at the University of Kansas based on the principles of behavior modification for individuals and organizations. (Detailed definitions are available from Health Studies upon request.)

Study staff consulted MESH to supply missing information and review the events for accuracy and completeness. After the recording process was complete, we coded each event into one of the seven categories of action (i.e., community change, community action, etc.), using the detailed definitions found in the *Work Group Evaluation Handbook: Evaluating and Supporting Community Initiatives for Health and Development* (Fawcett et al, 1995). The two study staff members achieved inter-observer agreement with Kappa >.80 in a practice database prior to coding MESH events.

2. Interviews with Key Informants

Semi-structured interviews took place between MESH staff and key informants nominated by MESH. We adapted the interview questions and wording from the *Work Group Evaluation Handbook* with the aim of identifying events and factors that may have influenced MESH's ability to facilitate community change for health improvement. (The list of interview questions and interviewees is available from Health Studies.)

Retrospective documentation of events is imperfect. It is likely that some important data are missing and others are not accurate. Experience suggests that missing and inaccurate information is most likely to affect the categories of community actions, media and resources generated. Although some data inaccuracies undoubtedly exist in the categories of planning products, community changes and services provided, we believe these are minor. The detailed and extensive documentation and review processes used in the MESH initiative made this potential problem less of a concern than it might otherwise have been.

Findings and Interpretations

Question 1. What did MESH do to achieve its mission and objectives?

Over 800 actions and events were entered in the database. Inter-observer reliability of coding was assessed between two observers; Kappa = .82 for the categories as a group, indicating excellent agreement beyond chance. The complete list of all events is available from Health Studies. Some examples of the actions and events:

Planning Products

- One community organizer was hired for each of the three Grassroots MESH communities.
- The Adult Collaborative "Community Exchange" developed a vision and objectives.
- The MESH core unit developed a work plan and budget.

Services Provided

- Staff from MESH and the Pool Trust held an orientation meeting to introduce Lehigh Valley not-for-profit organizations to the MESH concept and purpose, and invited them to submit grant proposals for individual projects.
- MESH community organizers gave presentations to Northern Lehigh civic organizations to share the results of a survey identifying local health concerns and priorities.
- MESH held a conference for health and service organization staff and community residents to share lessons and provide training on population health improvement.

Community Changes

- Allentown City Council passed a resolution to fluoridate the water supply.
- The not-for-profits participating in MESH collaboratives created over 30 new health improvement programs and services.
- The South Side Stakeholders, a grassroots initiative was established in collaboration with MESH and began activities to improve the health and quality of life of Easton residents.

As a whole, the MESH initiative produced slightly more services than community changes. The low proportion of events in the categories of community actions, media and resources generated are believed to result from data deficits and were excluded from analyses. The "other" category represents heterogeneous yet important activities that did not fit in other categories. Although many of these were highlighted in the qualitative interviews and analysis, they do not lend themselves to the quantitative analyses that follow.

To understand the rate and pattern of MESH accomplishment over time, events in the remaining three categories (services provided, planning products and community changes) were noted. Sudden changes in productivity may represent the influence of specific interventions, resources or personnel. These critical events are explored in Question 3. The analysis reflects both intrinsic differences between types of activity (e.g., planning actions are different from events producing a new program) and different levels of focus by the MESH initiative over time.

A moderate, steady rate of **planning products** begins early in 1997 (after the arrival of MESH leadership in November 1996 and their initiation of planning activities and team development). These planning products continue throughout the study period, as MESH staff are hired and as MESH assists partnering organizations with program planning and development.

Two separate periods of high **service provision** are evident. The first, from September 1997 to February 1998, probably results from technical assistance and training that MESH provided to participating not-for-profit agencies as they began to measurably enhance health through their individual projects. The second rise, September 1998 through September 1999, largely reflects Grassroots MESH activities such as presentation of the Northern Lehigh Assessment data to community groups and introductory presentations in Allentown and South Side Easton.

A prolonged, stable rise in the rate of **community change** starts in Summer 1998 and ends a year later, apparently as a result of increased events in each MESH program component: grassroots, clinical and not-for-profit. For Grassroots MESH this period represents the start of community-based activities in South Side Easton and expansion in Northern Lehigh. Clinical MESH activities reported here were mostly related to the fluoride initiative (see Chapter 10). Not-for-profit MESH events included new and/or improved programs by individual agencies and new practices by the adult and youth MESH collaboratives.

Question 1 — Interpretations

Overall, the rate of community change facilitated by MESH has increased steadily, producing more than 100 health-related changes in less than four years. This amount and rate of change is high in comparison with other community initiatives using the documentation system. Often, one community change stimulated others, in a kind of creative cascade. For example, a media campaign for child injury prevention prompted emergency departments to distribute information on bicycle helmets and a grassroots organization to staff an information booth on child safety at the local fair.

A leveling off in the rate of community change in mid-1999 is the opposite of what we expected, given that MESH was then in its full implementation phase. This may represent a period of reorganization and planning that began in Spring 1999 and is discussed further in Question 3. The high rates in both community change and service provision imply that MESH plays a dual role, as a catalyst for change and as a support system for service providers and grassroots groups. The types of community change produced suggest that MESH functions as a catalyst by creating organizational and systems changes—in turn, helping social service agencies and health care providers be catalysts for community health.

Question 2. How did MESH serve as a catalyst for change to improve community health?

We conducted several analyses of our data to clarify how the community change stimulated by MESH may be related to improvements in more distant community health outcomes.

Health-related outcomes and issues targeted by community change – Study staff used the event descriptions of each community change to compile a list of health outcomes and issues addressed by MESH. Of 103 community changes with an identified health outcome:

- 25% dealt with prevention (or management) of chronic disease (e.g., cardiovascular disease, asthma, mental health, diabetes).
- 9% with injury prevention (e.g., bicycle injuries, domestic violence).
- 31% with child and family health (e.g., dental care, youth leadership, parenting skills), and
- 35% with community functioning (e.g., community development, leadership training, collaborative initiatives).

Intended duration of community change – While a given change may be powerful enough to have an impact after a single exposure, experience suggests that community exposure over time is a prerequisite of achieving desired outcomes through community change. The vast majority of the changes we facilitated were intended to be ongoing.

Some examples of ongoing community changes facilitated by MESH:

- New programs and activities with service agencies (many projects begun in 1997 continue and have been institutionalized in the agencies).
- evaluation practices (including annual outcomes surveys and service tracking using databases) in numerous service organizations and grassroots groups.
- collaborative projects between MESH and community partners (e.g., Safe Night, now in its second year, and SouthSide Easton Pride Day, a city-wide, mayor-endorsed annual celebration)

Populations targeted by community change – Population-level health improvement requires changes that target both selected groups (e.g., after-school mentoring programs for youth living in poverty) and an entire community (e.g., fluoridation). We aimed the majority of our changes at the entire community. (In this context, "community" may mean an agency's service area, a grassroots group's neighborhood, or the Lehigh Valley region.)

Changes targeting specific leaders (11% of all changes) included the creation of an academic fellowship to develop community health and prevention skills among health care leaders and a workshop for school leaders on how to create safer schools and prevent youth violence. Changes targeting adults (11%) include improved social and health services for senior citizens; and an adult high school degree program. The 25% of changes directed toward children and youth include improved access to health services and after-school programs, reflecting MESH's emphasis on prevention.

Community sectors targeted by changes – The intent of the change is to create a behavioral or health outcome by modifying an organization within that sector. For example, to increase physical activity we may seek to change workplace policies to offer flextime for exercise. For example, a child safety fair organized by Kids and Community Connection brought about new working relationships and new programs with local police, supermarkets and restaurants, and the YMCA/YWCA. Thus, it is included in government/law, business/industry and civic/service sectors.

The three sectors most effectively reached by MESH-stimulated community change were civic/service, health care and neighborhood/grassroots. These results parallel the MESH program components (clinical, not-for- profit and grassroots). Schools were the beneficiary of more change than many other sectors, a finding consistent with the large proportion of changes targeting youth; a fair amount of community change also occurred in religious organizations.

MESH placed less emphasis on colleges and universities, businesses, government and media. This last does not imply the absence of media attention for MESH and MESH issues. In fact, MESH worked for and received significant press coverage. It is not reflected in the community change graphs because our activities were not, in general, intended to create or modify media practices.

Behavioral change strategies of MESH community change. Though any change in the environment may affect behavior and subsequent health outcomes, the manner in which a change works—its mechanism—can determine the potency of its likely effect.

Substantial evidence in the fields of public health and social marketing indicates that strategies to increase knowledge alone cannot reliably change behavior. Training or skill-building programs, performance feedback (especially immediate feedback) and social support (especially from those who can influence one's success) produce moderate to high rates of behavior change. Too often, behavior does not change because there are not enough opportunities to produce the desired behavior. Creating these opportunities means developing new or modifying existing conditions, as through a program or service. For example, an arts program for youth may create a new opportunity, enhance artistic skills and create incentives to stay out of trouble during non-school hours.

The major strategy of MESH-stimulated community change was creating new opportunities. Providing information, developing skills and recruiting support were also commonly applied strategies. These results are evidence of the large number of new MESH-related programs designed to inform and teach. There was substantially less use of the other four strategies—performance feedback, changing incentives, changing the physical environment and policy change—although the latter was a critical objective in the success of the fluoride campaign.

Question 2 — Interpretations

MESH produced community change across a wide range of health outcomes and issues, targeting both the broader community and specified populations. Most changes were intended to last over time. To meet our objectives, we stimulated change across most community sectors, with an emphasis on those

represented in the MESH program components (clinical, not-for-profit and grassroots). Although we used a variety of behavioral change strategies, the preferred strategies were providing information, developing skills, creating new programs/facilities, and building coalitions and support.

These findings suggest an attempt to balance MESH's broad population approach with more targeted goals and objectives. Achieving this balance required us to identify specific community changes necessary to impact a target population. The findings in this study suggest that other strategic options have been less developed in the MESH initiative to date. Currently, MESH plans are considering opportunities to engage new sectors and employ new strategies.

Question 3. What contributed to MESH's role as a catalyst for community change?

To answer this question, the study staff conducted semi-structured interviews with staff and partners of the MESH initiative. They were asked to identify critical events, events with positive and/or negative consequences for MESH; and they were prompted to identify resources and challenges that may have affected MESH's development. Following is a summary of the key findings from these interviews.

An opportune confluence of factors set the stage for MESH in the Lehigh Valley:

- a history of collaboration between the Pool Trust and Lehigh Valley Hospital;
- a critical mass of experience among those working to improve community health;
- new senior leadership at the hospital who valued and promoted community health activities;
- sufficient data describing the region's morbidity and health risks; and
- the perception that these health problems were manageable given available resources.

MESH was designed as a community health approach with three key characteristics:

- ongoing assessment (baseline data and regular tracking of population outcomes);
- connection between the clinical and community sectors;
- citizen and grassroots involvement.

It was also designed as a tripartite approach: clinical, not-for-profit and grassroots.

Thus, MESH's organization was conceptual and not program-based. Efforts to integrate programmatic accountability with conceptual activities led to some confusion and inefficiency.

Other problems included ongoing limitations in technical and staff capacities; the most pronounced were in the areas of measurement and evaluation in MESH's first year. Also, the publicity generated by the substantial financial commitment to MESH confused the community and led many to view the initiative as a community grant program.

Not-for-profit MESH – This component introduced the Lehigh Valley to hospital-community agency partnerships focusing on measurable health outcomes. Notable interview findings in this area:

- Providing non-contingent MESH grants mobilized the agencies on measurable enhancement of health.
- MESH provided opportunities for collaboration and communication never before offered.
- The process of organizing and focusing Not-for-profit MESH initiatives was often slow and challenging as agency representatives learned to identify and work toward common goals.

Clinical MESH – This component supported and expanded pre-existing Lehigh Valley Hospital programs and generated new hospital-based and community-wide clinical programs. Notable interview findings:

- City Council approval of water fluoridation in Allentown was a major success.
- MESH initiated several linkages between clinical programs at the hospital and health initiatives in the community.
- Support for clinical innovation and research at the hospital continues.

Grassroots MESH – Activities in this component, according to those interviewed, present significant opportunities and challenges:

- Northern Lehigh and Easton have embraced the MESH approach of citizen-led identification of community health priorities.
- It is a challenge to transform community health data and general public interest into focused and sustained activities.
- Different neighborhoods require different mixes of skills and resources to implement community health efforts.

The interviews generated a database which we continue to analyze at the time of this publication. The data provide texture, depth and specificity to complement quantitative data analyses. Through skillful and intelligent integration of qualitative and quantitative data, the full meaning of the MESH initiative will gradually become clear.

Summary and Conclusions

This study documents an impressive and diverse array of activities and community changes resulting from the MESH initiative. It demonstrates that MESH is unique in its scope of targeting change across health care, service and grassroots sectors. The rates of community change represent a high level of accomplishment in a time span in which few initiatives get beyond the planning stages. Thus, MESH has made substantial achievements. Still, its rapid origins and its admixture of bureaucratic accountability and conceptual creativity have led to persistent inefficiencies.

MESH's future promise rests on the strong foundation established in the last three years through the commitment of the MESH team, Pool Trust, DCHHS leadership and Health Studies Unit, and Lehigh Valley Hospital senior management. MESH is becoming a nationally-recognized model of how collaborative initiatives can improve community health through hospital/community partnership and mandated measurement. This study and others will provide insight and enhance efforts to improve community health far beyond the Lehigh Valley.

The Pool Trust and Lehigh Valley Hospital undertook a substantial and very public commitment—and risk—when they initiated MESH in 1996. The findings of this study demonstrate that they are upholding that commitment: MESH is "boldly going where none have gone before." The community changes stimulated by MESH testify to the vast benefit that can result from creative risk-taking. The study results demonstrate both opportunities to improve MESH as it moves forward and the positive impact the initiative continues to have in the Lehigh Valley. Sustained success begins this way.

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Mapping the Journeys of 29 Not-For-Profit Agencies in Lehigh Valley: A Retrospective Assessment of MESH Contributions

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Background

In working with not-for-profit agencies (NFPs), MESH (see Chapter 1) aims to enhance the singular and collaborative roles these agencies play throughout the Lehigh Valley, as well as their respective and collective impacts on community health improvement. Since our work with NFPs began, MESH has supported individual projects and collaborative activities in and among a total of 29 diverse Lehigh Valley agencies.

In the initial meeting with NFP representatives (July 1996), a key message was that Lehigh Valley Hospital and the Dorothy Rider Pool Health Care Trust were committed to "not doing business as usual," and that we expected the same willingness to innovate from participating agencies. Over the next 3 years, through grants and technical and logistical assistance, we have invested significant resources in both the process of working with the NFPs and in specific projects.

During the first 18 months, agencies applied for and received funds to conduct an initial project of their choosing. Examples include a fitness program for children and youth; a computer network to increase communication across agencies and service providers; asset mapping for a Latino service agency; and expansion of a wilderness lookout to make it accessible to the individuals with disabilities.

In October 1997, MESH's orientation evolved from supporting individual agencies to creating a collaborative model for the NFPs. We invited agencies to participate in one or both of two Valley-wide collaboratives, one focused on adults and the other on children. Of the 29 NFPs that participated in earlier activities, 15 joined the adult collaborative and 19 (including several of the 15) the children's collaborative. At the same time, a collaborative for communities of faith was launched.

Using a planning process facilitated by MESH, each collaborative developed a shared vision, defined issues and outcomes, set goals and developed a work plan. The adult collaborative (Community Exchange) chose to launch a project using two approaches aimed at engaging people in meaningful community participation and increasing their connections to each other and to needed services: CommunityShare (time-dollar exchanges) and StoryShare (individuals sharing their challenges and successes). Each of the 12 agencies continuing their involvement in the adult collaborative shaped these approaches to best match its client base and interest areas, but they also sought ways to connect their respective efforts.

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The 16 agencies involved in the full development of the children's collaborative (Kids and Community Connection) launched a Valley-wide public action and media campaign promoting their goals of children succeeding and of safe and supportive communities. Over 18 months, key messages are being incorporated into agency activities, special projects, a web site and toll-free telephone line. The collaborative has also engaged other community constituencies, including schools, communities of faith and businesses.

Early in the collaborative phase, participating agencies also had an opportunity to implement a second (or continuation) individual project, based on specific MESH criteria. In addition to the collaborative efforts, 50 of these individual projects were carried out with MESH support. Each had an evaluation plan, and assessment and measurement were at the programmatic level.

Outcome Engineering and Journey Mapping

While encouraging and supporting agency-specific programming, MESH's main focus goes beyond individual projects. Fundamental to our definition of success is facilitating change at organizational and systemic levels. To assess progress toward this larger challenge, our senior staff chose to employ a new and highly promising approach to accountability called Outcome Engineering. Outcome Engineering is a set of procedures developed by Dr. Barry Kibel, a national and international consultant on program evaluation. It is used for strategic planning, continual quality improvement and performance monitoring (Table 1). Outcome Engineering is a relatively new addition to the field of evaluation, devised in 1999 and installed on the Internet in January 2000, and its full potential is still to be realized.

Table 1. Outcome Engineering Methodology

PROCEDURE	PURPOSE
Vision Statement Development	Requires the initiative or program to describe in brief the most glorious future that it can help to bring about in collaboration with others
Mission Statement Development	Requires the initiative or program to describe itself and the work it does in the boldest and most inspiring terms it can justify
Outcome Challenges Development	Requires the initiative or program to identify those whom it has the greatest opportunities to influence, and to state the direction and breadth of change it will work toward with these partners
Journey Mapping	Provides a standardized and systematic way to document the movement of the initiative and its partners as a heroic journey
High-Performance Monitoring	Affords the initiative or program a way to examine itself through seven filters, each of which represents a key to continued high performance
Off-The-Path Excursions	Offers the initiative or program a series of spirit-expanding exercises aimed at triggering fresh thinking in areas where it is needed

Outcome Engineering is an attractive methodology in several respects. It:

- encourages organizations, programs and their staffs to express their passion outwardly and in clear and understandable terms;
- promotes the use of the heroic journey as the primary unit of analysis;
- exploits the power and potentials of the Internet as no evaluation or accountability tool has done before;
- hands the evaluation function over to the program team;
- allows funders and other stakeholders to reconstruct their own picture of a program and its

accomplishments, and to draw their own conclusions from these pictures;
- permits reports to be printed at any time summarizing the most recent and best work of a program;
- fosters deep learning across programs and organizations working on similar challenges.

Outcome Engineering offers MESH a systematic and highly stylized way to retrace, document and analyze our multidimensional approach to institutional and systemic change in the Lehigh Valley. It also produces a unique set of data for use in shaping our future directions. Further, it offers participating agencies the opportunity to examine in a fresh and illuminating way their interactions with MESH and their own progress and contributions over a given time period.

Although we are experimenting with several of its procedures, the aspect of Outcome Engineering we used in this evaluation of the NFPs is Journey Mapping. Journey Mapping tracks and gauges progress of individuals, groups and systems on their respective quests for growth. It offers an intriguing way to document MESH's transformational intent in our work with NFPs. This work is pioneering; it represents the first use of Journey Mapping to study the transformation of a network of agencies within a region.

Compatibility with Other Models

One key to our decision to use Journey Mapping was that it appeared complementary to, and went beyond, currently accepted models for tracking stages of growth in coalitions or collaboratives. These other models include the following:

Winer and Ray (1994) suggested three stages of intensity in the developments leading to full collaboration. Cooperation (Stage 1) implies short-term, informal relationships between agencies without a formal structure. Coordination (Stage 2) formalizes these relationships through joint planning, division of roles and communication. Collaboration (Stage 3) implies a blending of the resources and opportunities of the agencies, with commitment to a common mission. The level of sharing of resources, risks and rewards progresses as the agencies move along the continuum.

Kreuter, Lezin and Young (2000) summarized the earlier work of Butterfoss, Goodman, Wandersman and colleagues by framing the developmental stages of collaboratives in terms of the tasks associated with each. Preformation (Stage 1) refers to work done before actual funding is obtained. Included here are early meetings, group formation and needs assessment. Formation (Stage 2) is characterized by mission clarification and development of structures and procedures, including rules, roles and decision-making processes. This stage focuses on finding shared language, emphasizing similarities rather than differences and establishing legitimacy. Implementation (Stage 3) moves the coalition into the action phase where strategies and programs are planned and carried out.

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

This paper discusses the use of another cutting-edge evaluation technology that incorporates concepts central to public health practice, such as performance monitoring and outcome effect, with key community development principles of empowerment and participation. The use of this brand-new evaluation technology by Lehigh Valley Hospital is a marker of their commitment to the community because it requires the active participation of all partners in defining and measuring the progress of their actions. The use of this method is also cutting edge from the perspective of the evaluation field, because it will assess the role of MESH in observed community developments a way different from traditional experimental models for establishing causality. Such new ways of evaluation are demanded by the very nature of community initiatives and Lehigh Valley's experience will provide valuable information about the technique itself.

Maintenance (Stage 4) represents ongoing efforts to keep the coalition together after initial enthusiasm has waned and new priorities or issues have grabbed members' attention.

Florin, Mitchell and Stevenson (1993) took a developmental approach to conceptualizing community coalitions, offering a more detailed descriptive structure for analyzing the collaborative process. Their formulation included seven sequential stages: initial mobilization, establishing organizational structure, building capacity for action, planning for action, implementation, refinement and institutionalization.

Journey Mapping approaches a coalition not as a whole, but as an overlapping and potentially integrated set of separate journeys of the coalition members. In other words, a coalition of five agencies would be treated as five agency journeys occurring in shared time and space and with common intentions. Journey Mapping is a three-stage model patterned after the classic work of Joseph Campbell in his explorations of the journey of the mythical hero (Campbell, 1949). Each of these stages (Contemplation and Preparation, Actions and Successes, and Legacy) is divided into levels (15 in all), which can be clustered for descriptive purposes into the following seven journey status points:

- Status 1: Contemplation (levels 1-3)
- Status 2: Preparation (level 4)
- Status 3: Early Activity and Singular Success (level 5)
- Status 4: Multiple Activities, Successes and Setbacks (levels 6 and 7)
- Status 5: New Synthesis (level 8)
- Status 6: Social Contributions (levels 9 and 10)
- Status 7: Metamorphosis and Legacy (levels 11-15)

A comparison of Journey Mapping and the three earlier formulations of coalition growth is offered in Table 2. As can be seen, none of the earlier frameworks specifically addresses the possibility for dramatic transformation (i.e., metamorphosis). The opportunity for social and political impact are implied, but not stated explicitly, in two of the three frameworks. In short, Journey Mapping takes a longer and deeper look at the future of a successful coalition than do these three alternatives. Also, the terminology employed in Journey Mapping is more precise.

Table 2. Comparison of Models for Evaluating Coalition Development

Journey Mapping (Kibel)	Winer and Ray	Kreuter et. al.	Florin et. al.
Status 1. Contemplation		Pre-Formation	Initial Mobilization
Status 2. Preparation	Cooperation		Structure/Capacity
Status 3. Singular Success	Coordination	Formation	Planning/ Implementation
Status 4. Multiple Successes		Implementation	Refinement
Status 5. New Synthesis	Collaboration	Maintenance	Institutionalization
Status 6. Social Contribution			
Status 7. Metamorphosis			

The Journeys of the NFPs

As noted, Journey Mapping employs a prototypical three-stage, seven-status, 15-level journey script to interpret and plot the progress of an individual, group or system. In the case of the NFPs, the journey of interest was that of a not-for-profit agency located and operating within the Lehigh Valley and supported on that journey by MESH. Each journey so plotted began with orientation meetings leading to a proposal to MESH for a grant to support some new program area or project. For those agencies whose journey continued, MESH offered opportunities to participate in one or more collaborative. Experiences in these collaboratives, as well as other direct contacts with MESH for technical assistance and additional

support, led to further advances along the respective journeys. Clear similarities therefore existed across these journeys. However, given the diversity of the agencies and projects supported, the journeys also included details that were unique to the specific agency.

While the individual agency is the subject of the journey, our primary interest in the evaluation is MESH's influence on that journey—both through direct contacts and through the opportunities we created for interagency collaboration. Accordingly, only those aspects of an agency journey that can be linked directly to, or associated with, MESH involvement and influence are documented in the Journey Mapping process. The focus of the evaluation was stated in this way:

> **OUTCOME CHALLENGE**: MESH intends to see not-for-profit agencies enthusiastically come together and collaborate in non-traditional ways to address shared goals through innovative programming and shared resources, risks and rewards; and, individually and collectively, tap the potential inherent in the diversity of the Lehigh Valley to promote and enhance the health and safety of our community.

This clearly is not an easily measured outcome. In fact, Journey Mapping does not require such measurement. Instead, we carefully plot and score the movement of agencies toward this idealized outcome. The agencies' scores, both individually and in clusters, provide the numeric evidence on which to gauge MESH's success as a catalyst for change. The score for a journey reflects movement within and across the 15 levels. The more advanced levels earn more points than earlier levels. For example, preparing for the journey (level 4) earns 3 points, working toward initial successes (level 5) earns 6 points, serving as a mentor to peers (level 9) earns 9 points. A maximum score of 100 indicates completion of all levels. This is very rare—indeed, heroic.

Unlike many 100-point systems where only the top 20 or 30 points indicate success, the entire span of 100 points in Journey Mapping (as illustrated in Table 3) conveys success. For example, a score of 35 is actually quite impressive, as it suggests that the subject has joined the journey, achieved both singular and then multiple successes, overcome obstacles and made significant changes in work or life patterns to accommodate the journey.

Table 3. Interpretation of Journey Scores

Score	Progress on Journey
1-12	Contemplated but not yet embarked on the journey
13-18	Worked on some singular issue or opportunity area connected to the journey
19-30	Tackled and benefited from multiple journey-related activities
31-40	Readjusted or reorganized life/work pattern to fully accommodate the journey
41-60	Made social and/or political contributions related to the journey
61-80	Experienced dramatic transformation and reached mastery level
81-100	Left lasting legacy for others on their journeys

Table 4 defines the entire 15 levels of the journey in both general terms and specific language appropriate to the NFPs and MESH.

Table 4. Levels of the Journey

LEVELS OF PROTOTYPE JOURNEY	JOURNEY OF A NOT-FOR-PROFIT
STAGE 1. CONTEMPLATION AND PREPARATION	
1 Invited to take the journey	Received and sought out additional information about MESH
2 Motivated by visions and tales of success	Attracted to the opportunities presented by such a collaboration
3 Expressed doubts and received assurances	Questioned organization's ability to expand its existing efforts and engage in new programming
4 Prepared for the journey	Made arrangements (and possibly realigned resources) to allow participation
STAGE 2. ACTIONS AND SUCCESSES	
5 Made first steps and met success	Undertook a project or program to expand its commitment to "health enhancement" or skill building
6 Moved boldly forward and found additional success	Expanded its range of projects, programs or methods beyond the initial project or program
7 Hit obstacle(s) and found means to overcome it/them	Confronted resource (staff, funding, etc) or other issues that challenged commitment to continue on this path
8 Took additional steps forward and met new success	Integrated projects and programs within organizational system of delivery and increased effectiveness of these efforts
9 Had opportunity and successfully aided another in distress	Made contributions to engaging and/or moving forward some other organization, organizations, or collaborative
10 Hit major personal obstacle and found means to overcome it	Shifting vision, mission and central roles played by the organization were questioned by key insiders and outsiders
11 Made social contribution that drew attention to the success of the journey	Organization became more vocal and proactive in promoting "health enhancement" throughout Lehigh Valley and tackling issues impacting the entire community (beyond organization's normal services)
12 Made rapid forward progress ("hit the downward slope")	Remained the "gold standard" for other organizations in the community as it continued to promote health enhancement throughout the Valley (and perhaps beyond)
STAGE 3. LEGACY	
13 Returned to starting point and had impact on those reached there	Contributed significantly to community behavior patterns as these relate to key health-enhancing issues
14 Made permanent contribution to multiple others engaged in similar journeys	Contributed significantly to national agenda and methods as these apply to key health-enhancing issues
15 Shared the story of the journey with others	Shared the story of the journey with a broad audience as part of "folk history" of the Valley

Results to Date

Of the 29 agencies with whom MESH has worked, we have conducted in-depth interviews with ten, detailed their journeys in sequential steps, and created a series of computerized journey maps (via the Internet). In each case we interviewed multiple agency representatives (including staff who were involved but had changed jobs during the time covered) to capture the full accounting of the journey. For the other 19 agencies, we have done an initial assessment based on our knowledge and experience,

which we will modify as we conduct additional interviews. (Comparison of our assessments before and after the interviews with the ten agencies showed that our assessments tended to be reasonable but conservative.) These initial assessments were also entered into the database.

Of the 29 agency journeys, the longest is 76 (out of 100) and the shortest 15, with an impressive average of 33 and median of 29. Twenty-seven agencies (93%) reached at least to level five, indicating singular success; 20 of these (69%) achieved multiple successes (level six), and 13 (44%) continued on their journeys and achieved synthesis within their own agency. Six (38% of the original set of 29) reached beyond synthesis to work with other agencies, and four (14%) reached metamorphosis (i.e., they are not the same agency in spirit that began the journey a few years earlier). These findings as well as the individual agency scores are presented in Tables 5 and 6. Table 7 contains examples of MESH agencies at the various status levels.

Table 5. Summary of Selected Journey Data

Date of Earliest Journey Segment:	5/1996
Date of Latest Journey Segment:	3/2000
Months Covered:	46
Number of Mapped Journeys:	29
Longest Journey:	76
Shortest Journey:	15
Mean (Average) Journey Length:	33
Median Journey Length:	29
Number of Agencies with a Singular Success:	27
Number of Agencies with Multiple Successes:	20
Number of Agencies that Reached New Synthesis:	13
Number of Agencies that Attained Social Contribution:	6
Number of Agencies that Achieved Metamorphosis:	4
Journeys Impacted by Change Agents in addition to MESH:	10
Journeys Impacted by Catalytic Events Beyond Agency Control:	2

Table 6. Agency-by-Agency Journey Scores, Highest Level and Status Reached

AGENCY	Score	Highest Level	Status Reached
NFP20	76	13	metamorphosis
NFP26	67	11	metamorphosis
NFP16	60	11	metamorphosis
NFP12	57	10	metamorphosis
NFP10	49	9	social contribution
NFP17	46	9	social contribution
NFP4	43	9	social contribution
NFP14	43	9	social contribution
NFP1	40	8	new synthesis
NFP29	37	8	new synthesis
NF13	37	8	new synthesis
NFP18	37	8	new synthesis
NFP7	37	8	new synthesis
NFP23	32	8	new synthesis
NFP8	29	7	multiple successes
NFP22	27	7	multiple successes
NFP21	27	7	multiple successes
NFP6	27	7	multiple successes
NFP19	27	7	multiple successes
NFP3	25	7	multiple successes
NFP11	23	7	multiple successes
NFP9	21	6	multiple successes
NFP2	20	5	multiple successes
NFP15	19	5	multiple successes
NFP5	17	5	singular success
NFP25	17	5	singular success
NFP24	17	5	singular success
NFP28	15	5	singular success
NFP27	15	5	singular success

Table 7: Agency Examples of Status Reached

Status	Agency Story
Singular Success	NFP24 joined MESH in March, 1997. They implemented a program to increase positive behaviors in adolescent young men and women. They participated in MESH meetings including the annual conference at which they helped conduct a workshop. NFP24 worked independently on their project and a continuation of it. Although they initially expressed interest in joining a collaborative, they did not attend subsequent meetings. Attempts to re-engage them were unsuccessful, and they withdrew at the last minute from a joint training opportunity in Washington.
Multiple Successes	NFP21 has participated in MESH activities since July, 1996. The organization provides training for women re-entering the work force, and was attracted by the concept of community health improvement using non-traditional agencies. Their initial project was to develop an evaluation of their training using a comparison group from the Department of Welfare, and they expanded their services with a continuation project. They participated in Community Exchange and as a result have established mutual referral channels with agencies they had not worked with before.
New Synthesis	NFP1 developed a program to increase physical fitness and character development in children at risk as their first MESH project. That project, modified based on initial findings, has been institutionalized and expanded within the agency. They have incorporated the evaluation developed in the program and now include outcome evaluation in all their proposals based on what they learned from MESH. They are working closely with other agencies in Kids and Community Connection, integrating messages into their agency programs and contributing to joint projects. NFP1 has collaborated with other MESH agencies in several proposals and programs. They feel that as a byproduct of their engagement with MESH they have changed the way they work with children and improved their service delivery, and they have disseminated information about the experience through their national agency network.
Social Contribution	NFP10 joined the MESH effort because they saw it as a unique opportunity and were impressed by the holistic concept. After conducting area asset-mapping as their initial project, they joined with another agency to develop a program to prevent vision problems in Latinos with diabetes. For a continuation project, they used the resource guide developed from asset mapping to identify people with trade skills for further training with an agency they met through MESH. They feel their MESH partnership expanded them from dealing with the "Latino community" to being involved with the "human community." Their work with the collaboratives has added cultural diversity to their activities and increased their interagency relationships.
Metamorphosis	NFP20 developed a computer network for its members, staff and other service providers with the facilitation and support of MESH. NFP20 also became involved in two collaboratives. They credit their MESH engagement with transforming them from a reactive service provider to a proactive agent in promoting self-determination of people with disabilities. They serve as a resource to other agencies, and clients served by NFP20 have become more socially involved. Drawing on skills and experiences gained through their partnership with MESH, NFP20 activists engaged in successful efforts resulting in a chair lift at a major department store and attention to accessibility issues in communities of faith and other settings.

Observations and Next Steps

The interview process to date has not only provided the necessary data to document agency journeys, it has also proved valuable in identifying outcomes of MESH efforts that extend beyond our direct involvement. Clearly, a number of the agencies have undergone organizational change through their involvement with MESH. It appears that for the most part, the agencies that have changed most are the more independent agencies not affiliated with a national structure (e.g., a community theater group, a wildlife sanctuary). Several agencies who are strong MESH partners and key members of the collaboratives *are* affiliated with national organizations, and have not incorporated the level of fundamental change that the local agencies have—nor should they be expected to. National organizations tend to have basic structural, philosophic and management requirements for their affiliates. This should be kept in mind in reviewing the scores.

As we complete interviews, we will examine the data for other insights and patterns, including type of agency representation involved (e.g., executive director, program staff, administrative staff), type of agency (e.g., cultural, educational), and level of assistance from MESH staff. To date, we have seen no significant difference in scores of agencies based on the particular collaborative(s) with which they are working. This would indicate that progress on the journey is related to the process rather than the specific project. We are now examining the journeys in relation to time, to see if there are patterns in agencies' progress and if these relate to any shared or critical events.

Outcome Engineering presents an opportunity to use Journey Mapping as both a measurement of progress and an intervention. The interviews provided time for reflection and discussion with representatives directly and peripherally involved and those participating early on and more recently. As a result, representatives of both the agencies and MESH gained an overall perspective of our efforts and reflected on key elements in our work together to date. The information is helping to inform our planning as we address targeted geographic and topical areas.

Because this process has proved useful and insightful retrospectively, we are pursuing its use in future activities. We are also using other Outcome Engineering procedures, including Vision Statement Development, Mission Statement Development and Outcome Challenges Development, in the Northern Lehigh and Central School neighborhoods. Community Exchange has implemented High-Performance Monitoring, as has LOVAR (see Chapter 5), and that aspect of the system will soon join Journey Mapping on-line.

This model is being used by a number of other health-based agencies and programs, including the Bon Secours Health System, the Health and Faith Initiative housed at Emory University, The Health Trust of Santa Clara County, the QueensCare Health System (Hollywood, CA) and the TriHealth system (Cincinnati, OH). The Internet system for data entry and analysis, made operational in February 2000, allows sharing of successful journeys and related best practices across sites. As of the writing of this report, there are not enough entries to develop a reasonable comparison. However, as we and others use the system we plan to examine our results, both for comparison and to learn from the successes and practices of others.

Redesigning Care, Redesigning Policy: HIV/AIDS and Managed Care Planning in the Lehigh Valley

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Planning was initiated in 1997 to prepare for the advent of mandatory managed care for Medical Assistance recipients and its impact of HIV-infected persons living in the Lehigh Valley. This article provides a short background on the HIV epidemic, the implications of managed care on the treatment of HIV disease and the progress of and lessons learned from the readiness planning.

Background: The HIV Epidemic

In the two decades that have passed since the first reports of Acquired Immunodeficiency Syndrome (AIDS), the HIV epidemic has undergone a startling metamorphosis in the United States. Major advances in antiretroviral therapy and laboratory assessment have revolutionized the care of patients with HIV. In the process, modern medicine has transformed an invariably progressive and ultimately fatal disease into a potentially treatable chronic medical condition, offering patients both new hope and new dilemmas in the process. These therapeutic and technological advances have combined with some major demographic shifts to produce dramatic changes in the economics of caring for patients with HIV.

Several factors have played a major role in transforming the landscape of HIV care:

A Shift in Demographics — Hemophiliacs and homosexual men were the primary victims of the early epidemic in the United States. Most of these were privately insured and able to mobilize adequate support to help them deal with the emotional, physical and economic burdens of the disease. However, the face of the epidemic changed as growing proportions of injection drug users and their sexual partners and children became infected. HIV rapidly became a disease with no ethnic, racial or geographic boundaries. Those most commonly infected were largely uninsured or underinsured—minority and marginalized Americans often plagued by the double burdens of substance abuse and fractured family and social support systems. Several national factors have influenced these trends, including continued disparities between the economic classes, the challenges of dealing effectively with the drug epidemic, and the observed direct relationship between substance abuse and the spread of sexually transmitted diseases.

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New Therapies and the Changing Natural History of HIV Disease — The average life expectancy of untreated HIV patients is eight to 10 years from initial infection. The term "AIDS" refers to HIV-infected hosts who have developed severe immunosuppression documented by either by laboratory assessment (CD4 count below 200) or clinical (opportunistic infection) evidence. Most patients succumb not to HIV itself, but to the opportunistic infections that may develop as the host suffers immunologic destruction from the HIV virus. Before the discovery of effective antiretroviral agents, HIV patients faced the grim reality of a rapidly progressive and almost invariably fatal illness. AZT, the first approved medication able to impair HIV replication, became available in the mid-1980s and brought limited improvements in survival. The first noticeable decline in death rates occurred in the early 1990s as medical science became more capable of treating and preventing opportunistic infections. But it was the advent of a new class of HIV medications, the protease inhibitors, and the use of these agents in combination with other HIV medications ("drug cocktails") in the mid-1990s that truly revolutionized HIV medicine.

Using these drug combinations, physicians could effectively contain viral replication at a low level, halt disease progression and, in many cases, reverse the damaging effects of HIV on the immune system. Though by no means a cure, these regimens have given infected patients the hope of longer, healthier and more productive lives. Using recent survival statistics, investigators now estimate a life expectancy of two to three decades from the time of infection (assuming patient compliance with medical care). This estimate sheds light on one of the current problems in HIV management: daily, expensive, lifetime therapy is necessary to maintain health and prevent complications. With more patients living longer, the medical costs will continue to rise.

New Medical Complications and Problems — With today's treatment improvements, there has been a dramatic reduction in HIV-related hospitalizations and overall HIV-related mortality. Indeed, recent evidence suggests that more than 50% of deaths are now from non-HIV-related causes such as trauma, malignancy and hepatitis C-associated hepatic failure. As people live longer lives with HIV, the treatment of these co-morbidities will become an increasingly important issue. Hepatitis C co-infection occurs in 80-90% of HIV-infected injection drug users and 10-15% of HIV-infected heterosexuals. Treatment with a one-year course of combination therapy costs thousands of dollars, but may cure hepatitis C or at least slow the rate of liver damage. Without treatment, many patients survive their HIV infection only to die of complications of hepatitis C.

New medications have also been associated with novel toxicities. Because of critical need and life-saving potential, most new HIV therapies are made available to patients in a remarkably short time through a "fast-tracking" process of the Food and Drug Administration. The downside is that unexpected drug toxicities have been encountered only after widespread use of the agents. For example, in recent years many patients exposed to drug cocktails have experienced a broad array of metabolic abnormalities, such as fat redistribution, insulin resistance and abnormal cholesterol and triglyceride levels. These abnormalities are seen in as many as 50-80% of patients exposed long-term to protease inhibitor-containing regimens. Many other medication-associated disorders have recently gained notoriety, including accelerated osteoporosis, increased spontaneous bleeding in patients with hemophilia exposed to protease inhibitors, and hepatic steatosis (fatty infiltration of the liver).

These potential side effects heighten the need for vigilant laboratory and clinical assessment of patients receiving therapy. Experts recommend routine laboratory monitoring every three months, and more often for many patients starting new regimens. These evolving standards have increased the laboratory costs of routine HIV care.

New Laboratory Technologies — Several new technologies allow physicians to better monitor disease progression and the impact of antiretroviral therapy. Molecular diagnostic techniques can determine the actual amount of HIV replicating in the bloodstream ("viral load"). We know that patients with higher viral loads progress more rapidly to AIDS and that maintaining an undetectable viral load is crucial to preventing drug resistance and subsequent treatment failure. Physicians now use viral load testing in

conjunction with CD4 counts to determine the proper time to initiate therapy or to modify failing therapy.

The last three years have also seen the development of new tests to detect the presence of drug resistance in the HIV-infected patient. *Genotyping* involves determining part of the genetic sequence of the HIV strains replicating in a patient to detect "mutants" resistant to specific medications. *Phenotyping* assesses the ability of specific medications to inhibit HIV replication. The information from these tests, used in conjunction with the patient's antiretroviral drug history, has proven helpful in optimizing therapy in certain types of patients.[9] Genotyping and phenotyping are costly, but vital to first-rate HIV care.

The Continued Spread of HIV – While medications control HIV, they neither cure it nor totally prevent its spread. Recent CDC estimates indicate there are 650,000 to 900,000 Americans living with HIV—approximately 0.3% of the U.S. population, or 1 in 300. Despite widespread public education, some 40,000 new infections are diagnosed in this country each year. As HIV-infected persons live longer, we can expect the risk of spread to their partners and progeny to continue. The likelihood of drug-resistant HIV developing in patients on long-term therapy will also continue to increase. Thus, until an effective cure or vaccine is discovered, this public health problem will challenge physicians and the medical economy for many years to come.

The Increasing Complexity of HIV Care — Advances in knowledge and new treatment options have resulted in rapidly changing standards of care. Keeping current requires significant focused attention and practice. Not surprisingly, it has been demonstrated that HIV expertise among primary care providers improves the outcome of treatment. In addition to clinical care, HIV patients require integrated health and social services (including education in disease management and assistance in addressing the financial impact of the disease) from multiple providers and settings. Coordination of all these services is essential.

HIV and Managed Care

HIV/AIDS is its own paradigm in many ways—a communicable, eventually fatal disease affecting primarily young people during their productive years. Taking a regimen of up to 20 pills daily for the rest of their lives suppresses, but does not eradicate, the virus. If adhered to, these drugs repair the damaged immune system, allowing a person with HIV to return to work and lead a fruitful life. The drugs are costly (approximately $1,000 per month) and patients require monitoring and physician follow-up every three months. How to provide high quality care to this complex population in a cost-effective manner is the question at hand.

As HIV treatment has been evolving in recent years, the health care environment itself has also transformed. Managed care plans have proliferated in the private and public arenas to reduce costs through

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

The theme of discovery that pervades the entire MESH initiative is evident in the structure of services for HIV/AIDS patients described here. The services are based on evidence in the literature and epidemiological data, but they also evolved from a natural history of organizational relationships and lessons learned along the way. Clearly, there is a long standing sensitivity to the needs of the patient community being served that has shaped services over time. When coupled with the efforts in on-going assessment and evaluation, this sensitivity translates into concrete action to identify knowledge gaps and other steps that need to be taken to improve services. Furthermore, the structural support provided by the entire community health initiative of the hospital enables the programs to be responsive to fiscal and policy changes that will impact both HIV/AIDS patients and the way services can be delivered.

tight service utilization management and direct contracting with accountable health service providers. While these strategies can be effective in a healthy, employed population, the same approaches can be contradictory in the management of a resource-intensive chronic disease like HIV/AIDS.

It has been demonstrated that physicians who specialize in HIV achieve better clinical outcomes. However, a specialist-based system runs counter to the managed care practice of holding primary care physicians accountable for their patients' needs. The common managed care model in which generalists provide primary care and specialists serve as consultants must be modified. HIV specialists must become their patients' primary care provider, with the ability to participate in a multi-disciplinary system that can access an array of clinical, social and ancillary services. If providers are compensated for restricting access to specialty care, the outcomes for HIV patients will be compromised.

In HIV care it is often difficult to anticipate and control costs, especially for medication therapies and laboratory follow-up. New antiretroviral medications are emerging at a rapid rate. In an extremely cost-conscious environment, access to these new drugs is likely to be questioned (or at least delayed), thus curtailing introduction of potentially more effective treatments.

Furthermore, the success of any HIV drug regimen is completely dependent on the patient's degree of adherence to therapy. Long-term benefits (and, ultimately, cost-effective care) can only occur with at least 95% adherence. Such extreme compliance requires extensive support, with careful case management to link clinical and support services.

Using a capitated approach, managed care companies compensate providers up front for the care of a specified population. Ideally, they enroll relatively healthy people requiring minimal care; they have no incentive to seek out those with HIV, given the resource-intensive nature of the disease. Likewise, providers often are not compensated adequately for the expensive and intensive care required by HIV-infected patients. In many regions, these patients are capitated by managed care companies at the same rate as non-infected people, despite the demonstrated higher costs of quality HIV care. Without a risk-based rate, providers will not adequately be paid for the delivery of quality HIV care—or quality will be sacrificed due to financial constraints.

A 1998 Report from the Department of Health and Human Services finds that "Medicaid managed care organizations paid an AIDS-enhanced rate appear to provide all needed medical services and drugs to AIDS patients. Those not paid an enhanced rate report they cannot afford to continue to provide these services and drugs without financial compensation."

This high-risk financial environment is especially challenging in Medical Assistance managed care, where capitated rates are low and dedicated HIV specialists few. Especially among ethnic minorities and those with a history of substance abuse, Medical Assistance is the primary source of health insurance. Overall, more than half of people living with HIV are covered by public programs and seek care in public agencies. By 2001, it is predicted that at least 50% of this group will be enrolled in managed care programs.

Local Experience

The Lehigh Valley region has not been immune to the AIDS epidemic. This two-county area (1999 population estimate: 559,591) was home to 342 persons presumed to be living with AIDS (of 731 cumulative cases) as of June 30, 1999. This prevalence represents a 23% increase over the previous 12 months and a 51% increase in the last three years. In 1999, Lehigh County had the highest rate of increase in cumulative AIDS cases in all of Pennsylvania (13.77 per 100,000). The six-county area including the Lehigh Valley had 17% of Pennsylvania's new AIDS cases in 1998, up from 11% of new cases in 1987.

Since HIV/AIDS is not a reportable disease in Pennsylvania, persons accessing AIDSNET-funded services (explained below) can be used as a proxy measure of HIV prevalence. In FY1999, 600 Lehigh Valley residents received some level of AIDSNET-funded service. This volume represents a 14% increase from the previous fiscal year.

Here as elsewhere, HIV/AIDS is highly localized in metropolitan areas and disproportionately affects injection drug users, their partners and children, homosexual men and ethnic/racial minorities. In each of the last three years, Lehigh County had higher proportions of women and Latinos with AIDS than the state as a whole. In 1999, more than a third (33.8%) of Lehigh County AIDS cases and 28.7% of Northampton County cases were women (compared to 27% in the six-county region and 22% in Pennsylvania). Latinos represent nearly half of AIDS cases (48.2% in Lehigh, 54.6% in Northampton) compared to 11% in Pennsylvania as a whole. In both counties from July 1998 through June 1999, IV drug use was the primary source of infection (51.7% of cases in Lehigh County, 57.4% in Northampton), followed by men having sex with men (17.1% and 16.7% respectively) and heterosexual contact (15.3% and 11.9% respectively).

Increasingly, those newly diagnosed with HIV are poor and disenfranchised, with financial and social barriers limiting their access to medical care. The barriers are especially prevalent among urban ethnic minority populations and women, two groups increasingly affected by the HIV epidemic.

Development of Local Resources

Four phases of development have occurred in the Lehigh Valley in response to the needs of persons with HIV:

Phase I – Creation of the AIDS Activities Office to provide integrated clinical and social services

Lehigh Valley Hospital developed its AIDS Activities Office (AAO) as a model of care that would address the epidemiological, clinical and social aspects of the disease. Established in 1989, AAO is a multidisciplinary team of health and social service professionals providing early-intervention primary care, nutrition, education, case management and supportive services to persons affected by HIV.

AAO's mission is three-fold: to reduce the rate of HIV infection in our service area; to support HIV-infected men and women by helping them access health and social services; and to improve the quality of health care services available to them. While primarily serving patients of Lehigh Valley Hospital, AAO is committed to collaborative service delivery to attain the best outcomes for clients and their families. This hospital-based program blends strong clinical expertise and experienced social case management in a holistic approach to clients' needs. The staff is bilingual and bicultural, with a collective total of 46 years' experience in caring for HIV patients.

At its inception, AAO provided social case management to about 100 clients seeking medical care at Lehigh Valley Hospital. Funded locally by the Dorothy Rider Pool Health Care Trust, AAO evaluated clients' needs and linked them to appropriate hospital and community resources. In this early stage of the epidemic, the main focus was assisting clients to die with dignity.

In response to clients' growing medical needs in the early 1990s, AAO expanded into delivering early-intervention primary care. Successful acquisition of federal funding from the Ryan White CARE Act (Title III) has supported this clinical function for the last nine years. In 1996, AAO acquired government funding for non-clinical, social case management services, thus enhancing its integrated clinical and social approach to quality care.

At the end of 1999, 458 persons were in active care with AAO, a 9% increase over the previous year. Of these, 63% were male; 42% were Latino and 35% Caucasian; 34% contracted the HIV virus through IV drug use and 38% through heterosexual contact. Of the 458, 24 were children, virtually all of whom acquired HIV perinatally. The majority of AAO clients (85%) reside in or near the city of Allentown.

Phase II — Collaborative partnerships between the AIDS Activities Office and two other organizations

AAO has had cooperative arrangements with community-based providers since its inception. In 1998,

it expanded its relationship with AIDS Outreach to increase efficiency and effectiveness. Established in 1989, AIDS Outreach exists to deliver quality non-medical services (including food pantry, transportation, buddy services and emotional support) to HIV patients and their families. Provided by a small staff and a large pool of volunteers, these "wraparound" services and a direct approach to problem-solving help AAO staff implement care plans that respond to clients' identified needs and concerns.

At the same time, transformations were occurring at AIDSNET, the six-county regional HIV planning coalition and a fiscal agent for federal and state funding. AIDSNET developed a continuum of HIV care including medical, social and ancillary services accessible throughout the region (Exhibit A). Through designated case management units including AAO, AIDSNET made funding available for basic needs, transportation, mental health, legal aid and other services. AAO case managers were empowered to implement clinical care plans based on client needs.

In addition to AAO and its partners, Lehigh Valley residents with HIV have other choices for clinical services including another hospital and several physicians in private practice. Two other social service providers address non-medical needs. While services were available from all these providers across the region, thus providing opportunities for consumer choice, there was little interaction among them in the delivery of care during Phase II.

Managed care experience — Over 42,000 Lehigh Valley residents receive Medical Assistance benefits, with over one-third voluntarily enrolled in a managed care organization. Medicaid is the leading payor for HIV clinical services in the Lehigh Valley. Nationally, half of adults and 90% of children with HIV receive Medical Assistance benefits; locally, 48% of AAO patients do so.

Managed care penetration has increased annually in the Lehigh Valley since the early 1990s, mainly among employer-based and private insurers. Since 1994, the region's Medical Assistance recipients have been able to voluntarily enroll in a handful of managed care programs. By 2000, over one-third of them had chosen this route. Enrollment will become mandatory in October 2001 with the implementation of HealthChoices, Pennsylvania's Medicaid managed care program. This will significantly change how persons with HIV access medical care and how providers of HIV care are compensated for their services.

Pennsylvania's Department of Public Welfare (DPW), which manages Medical Assistance, requires HealthChoices managed care companies in the Southeast (Philadelphia) and Southwest (Pittsburgh) regions to establish Special Needs Units insuring access and utilization for special need populations including those with HIV. It is anticipated that this requirement will extend to the Lehigh/Capitol region as well.

However, DPW has yet to fully address the potential financial risk faced by service providers in a capitated environment. Many HIV providers have found the negotiated rates offered by Medical Assistance managed care organizations insufficient to cover the costs of providing care that meets recommended standards. Such a gap jeopardizes their financial viability and ability to care for clients over the long term.

Phase III – Development of an expanded local HIV service network with emphasis on managed care readiness

Established by the region's seven hospitals in 1994 as a not-for-profit organization, Partnership Health Plan (PHP), the Lehigh Valley's leading managed care company serving Medical Assistance recipients, reached an enrollment of 11,000 members in 1999. PHP leadership, through its benefit package, demonstrated a commitment to providing quality health care while controlling costs. PHP marketed its services across the entire Medical Assistance population, including the HIV community.

In late 1997, Lehigh Valley Hospital, PHP and AIDSNET began discussing the best way to serve HIV patients in a managed care environment. Over the course of two years, they reached consensus on several strategies including:

- **a pilot program in which PHP capitated case management services** for a small group of AAO patients. Through periodic monitoring, PHP measured AAO's clinical and social service compliance with established standards of HIV care and evaluated the related expenses. Through this project, PHP increased its commitment to fund a comprehensive and integrated clinical and social service model for HIV care.
- **formalized monitoring of providers by AIDSNET** to insure that social service delivery met established standards of care. AIDSNET also piloted an outcome measurement tool through which case managers could identify and prioritize client needs and measure progress toward established goals.
- **a tool to gauge organizational readiness for operation in a managed care environment**. The tool was developed by the Pennsylvania Coalition of AIDS Service Organizations. Through its involvement in this work, AIDSNET offered the Lehigh Valley as a pilot site, giving AAO and AIDS Outreach a chance to assess their managed care-related strengths and weaknesses.

These strategies led to a greater understanding about what it would take to operate in a managed care environment. However, many steps remained. Prominent among them was the need to increase our knowledge of the costs of HIV care. We also needed to formalize relationships between key HIV service providers to better coordinate services and facilitate managed care contracting. The Dorothy Rider Pool Health Care Trust awarded funding in November 1999 to support these two readiness activities.

Costs — Understanding HIV service utilization and the associated costs of care, especially for Medical Assistance recipients, is essential to ensure accessibility, improve efficiency and measure the gap between the cost of meeting care standards and the rate proposed by DPW and its affiliated managed care plans. These data can then be used to advocate for a risk-based rate from DPW and to negotiate higher capitated rates from the plans. We are designing and conducting analyses to further understand these economic issues.

Network development — In 1999, network development activities (Figure 1) began with support from the Pool Trust. A small planning group succeeded in bringing key medical and case management providers to the table. This network approach would integrate clinical and social services (similar to the AAO model of care) across several providers to achieve better clinical and quality of life outcomes for people with HIV. The rationale behind an integrated delivery network is as follows:

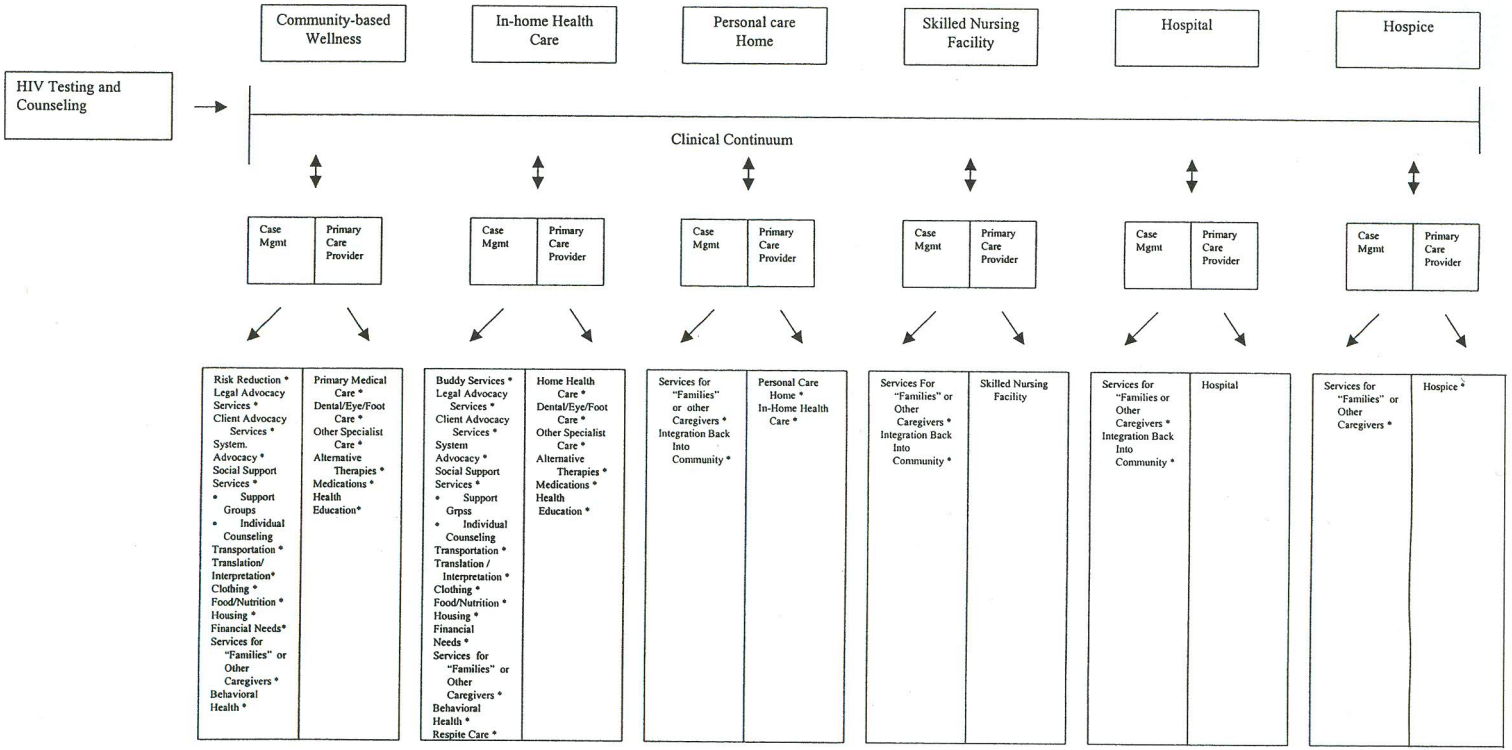
- to coordinate service across the continuum of care
- to reduce service duplication
- to insure service availability across a defined geographic area
- to facilitate high quality service delivery based on jointly held standards of care among all network providers
- to consistently measure outcomes across the network
- to provide a potential structure for managed care contracting.

The network concept is appealing to managed care plans like PHP because of the ease of contracting with a single organization and because of the comprehensive, coordinated services that result. PHP's participation greatly enhanced the planning process. Its input on managed care policies and procedures, contracting requirements and related services provided invaluable guidance. PHP's commitment to integrated services as a foundation for high-quality yet financially viable care was unique among managed care plans.

Phase IV – Development of a regional network in response to Pennsylvania's mandatory managed care program

As the HealthChoices implementation process proceeds, the commitment to provide high quality, coordinated HIV care remains as strong as ever among providers from all specialties and settings. Stakeholders also remain committed to the network planning process, although the degree of formal affiliation has yet to be determined. We have reached initial agreement on a "loose affiliation" (or trade

Figure 1. AIDSNET Continuum of HIV Care



association) approach that can support joint learning about managed care preparedness and a collective approach to advocacy.

Several challenges remain in this preparatory work. PHP announced its closure in April 2000 due to its inability to meet a DPW mandate to expand its services from two counties to the 10-county Lehigh/Capitol region. An effort to obtain an exception to this ruling failed, and partnering with other managed care plans proved too costly. As a result, network planners have begun strategizing to engage other managed care plans in their work and to expand their geographic scope beyond the two-county region.

Lessons Learned

Through the journey described above, we have learned many lessons about providing high quality HIV care today. We offer these suggestions:

Plan as effectively as possible in a constantly changing environment. Shrinking financial resources, especially from public sources, will continue to challenge providers to maintain quality care for increasing caseloads.

Learn from others. The experiences of providers in neighboring states and regions helped inform and direct our work in the Lehigh Valley. We also benefited from technical assistance provided by the federal government and local philanthropic support.

"In God we trust, all others bring data." Quantifiable data are increasingly vital in demonstrating outcomes of service delivery, the value of our work and the need for greater resources. Collecting, analyzing and reporting data must become as important as service delivery for HIV providers.

There is strength in numbers. A tight financial environment tends to increase competitiveness; but HIV providers can still develop collaborative relationships to insure service coordination and advocate for needed resources.

Managed care organizations are not the enemy. Our experience showed that there are managed care leaders committed to high quality, comprehensive care for people with HIV. The benefits of working together far outweigh the alternative, less cooperative approach.

Part of our joint success in maintaining a quality health system will be to advocate for appropriate reimbursement for HIV services from managed care companies. This advocacy for comprehensive, quality care must extend to all managed care companies in a market area. If we work with only a portion, these organizations are at a higher risk of enrolling the bulk of the HIV population (and becoming responsible for their higher health care costs).

The LOVAR (Lowering of Vascular Atherosclerotic Risk) Study: An Integrative Model for the Collaboration of Vascular Medicine, Public Health and the Community

JOHN E. CASTALDO, MD, AND JANE M. NESTER, MPH, MED

Introduction: Significance of Vascular Disease

According to the American Heart Association, cerebro-cardio-peripheral vascular disease (CCPVD) remains the nation's leading cause of death and disability. The direct healthcare costs of atherosclerosis in our country are staggering, exceeding $300 billion annually. In the Lehigh Valley, ischemic heart disease and stroke accounted for nearly one quarter (24%) of all deaths from 1985 to 1989. Although death rates for heart disease and stroke have declined somewhat over the past 20 years, this is more likely due to advances in care of patients with end stage disease than to a decline in the actual prevalence of cases. Risk factors such as obesity, diabetes, sedentary living, smoking, hypertension and hyperlipidemia (high cholesterol) remain high in the Lehigh Valley, often above state and national levels. CCPVD is still the primary reason for hospital admissions in our region, and the rates of developing atherosclerotic disease continue to be among the highest in the nation. Based on Medicare data alone, Lehigh Valley Hospital is among the top 12 hospitals in the nation for volume of stroke admissions and the top five in Pennsylvania for coronary artery bypass procedures.

Here and nationally, high-tech interventions have proliferated, including catheterization, intra-aortic balloon pumps, angioplasty with stent, and surgery including bypass and endarterectomy. Our cardiologists, cardiac and vascular surgeons, neurologists and primary care physicians have mastered the diagnosis and treatment of established vascular disease. They provide excellent tertiary care of patients who often present with life-threatening risk.

However, as economic and mortality statistics show, tertiary care is not a productive or cost-effective way to treat cardiovascular disease; nor is it reliable. Nearly half of patients with sudden death due to stroke or heart attack did not reach the hospital in time for treatment. Most stroke patients fail to realize the significance of the painless symptoms they experience, with the result that many suffer a major stroke which could have been prevented. Too often, treatment of both stroke and heart disease is given after the majority of damage is done. Heart attack patients often are left disabled due to irreversible scarring of the heart, and the situation is even worse for stroke patients. The leading cause of disability in our nation, strokes can devastate the patient and family by virtue of the attendant language impairment and loss of independence.

While clinical progress in early detection, diagnosis and treatment has made Lehigh Valley Hospital a "center of excellence" over the past two decades, hospital-wide integrated disease management programs in prevention have been slow to evolve in our

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region and nationally. Why are rates of developing atherosclerotic diseases here among the highest in the nation? While we do not know the answer for certain, it is clear that modifiable risk factors play a large role in driving these statistics. As mentioned above, CCPVD risk factors are higher than average in the Lehigh Valley, and our population resists attempts to control them. These risk factors include epidemic levels of obesity, diabetes mellitus, hyperlipidemia and hypertension. Cigarette use is decreasing overall, but rising among the young. According to a 1995 survey of schools, only 11% of youths did *not* smoke during the previous year and only 38% reported never smoking. Moreover, an increasingly sedentary lifestyle prevails among young and old despite attempts to educate our community on the benefits of physical activity.

The LOVAR Study

Over the past three years, Lehigh Valley Hospital in collaboration with the Dorothy Rider Pool Health Care Trust has developed and launched a clinical study measuring prevention outcomes in vascular disease. LOVAR (Lowering of Vascular Atherosclerotic Risk) is a multifaceted and multidisciplinary approach to an important public health problem: the (secondary) prevention of CCPVD. LOVAR seeks to optimize the health and quality of life of participants through aggressive and comprehensive biopsychosocial prevention and intervention strategies. These include individual and group education, counseling and support, and ongoing case management, all designed to complement appropriate medical and surgical interventions.

LOVAR is a five-year prospective cohort controlled study designed to enroll 500 CCPVD patients from our region. Participants—250 treatment patients and 250 controls—are drawn from inpatients admitted to Lehigh Valley Hospital for stroke, heart attack or a vascular procedure, and from physician practices during routine office follow-up and care. We refer patients to LOVAR only after obtaining permission from their primary care or specialist physician. Participants must have documented CCPVD within the previous six months and at least two modifiable risk factors for non-disabling stroke, heart attack or peripheral vascular occlusive disease. Each patient will be followed for at least three years in the study. The control group, who receive "community standard treatment," will be matched to the LOVAR treatment group with respect to age (39-79), gender and vascular risk factors. Outcomes of risk factors in the control group will be compared to outcomes of patients in the treatment program.

LOVAR Outcomes

Primary outcome measures include:

- Increased use of prevention strategies by physician practices;
- Patient success in risk-factor modification;
- Programmatic cost-effectiveness including a decrease in hospitalization, surgery and vascular procedures;
- Improved patient satisfaction and quality of life measures; and
- Improved physician satisfaction with the timeliness and usefulness of prevention services.

Secondary outcome measures include:

- Reduced rates of vascular death and total mortality; and
- Reduced rates of recurrent infarction of the brain, heart and/or extremities.

The LOVAR treatment group is taking part in a comprehensive and aggressive program of lifestyle behavior changes and risk factor reduction education. They also receive ongoing coordinated case management. The program includes treatment of depression and techniques to reduce stress, hostility and aggression—elements that we know are necessary to significantly reduce or slow development of atherosclerosis. The other risk factors addressed by LOVAR are smoking/tobacco use, poor nutrition, obesity, elevated cholesterol, hypertension, physical inactivity, diabetes and elevated homocysteine.

Community Impact Strategies

As the country continues to move from "sick care" to "health care" and from "body repair" to "preventive medicine," LOVAR will help pave the way for improved health at the community level. To do this, we are using a number of strategies such as:

Measuring changes in physician practice patterns toward vascular disease prevention. We hypothesize that the practice patterns of local physicians will improve with the implementation of a comprehensive, coordinated preventive medicine curriculum including individual mentoring and continuing education exchanges with LOVAR physician champions. Specifically, we are measuring physician satisfaction and changes in the prescription of risk reduction measures and preventive services. The instrument is a non-leading/non-threatening annual survey of participating physicians throughout the data collection period. Local prescribing practices will be compared to historical published data and to a local database of physician referrals to preventive services (offered by Lehigh Valley Hospital's health promotion programs and outpatient cardiac and stroke rehabilitation services).

Determining LOVAR's economic impact on individual and community health through a cost-benefit analysis of the treatment group. Working with cost-benefit consultants, we have determined the types of analysis and data collection points necessary to demonstrate the effectiveness and fiscal implications of a comprehensive, coordinated vascular prevention program in a capitated health care delivery environment. Major incentives to demonstrate the cost-benefit are: (a) to ensure program viability at the conclusion of the study and (b) to enable the model to be replicated within PennCARE (our integrated delivery system) and other communities.

Finding new ways to work with local physician practices (both primary and specialty care) so they will be better educated on how to contribute to patient management, disease prevention and referral. Although this may prove especially challenging in a managed care environment, it will begin the process of shifting them toward atherosclerosis prevention rather than tertiary care.

Involving family practice and other primary physicians more directly in delivering healthy lifestyle education and in referring patients to community services as well as to LOVAR and Lehigh Valley Hospital's health promotion services. Primary physicians can have a significant influence on patient care outcomes by emphasizing and reinforcing healthy lifestyle behavior changes, both for LOVAR's treatment group and the control group. By encouraging such an approach in our participating primary care offices, we will raise awareness of the power of prevention at this important health provider level.

Involving "significant others" as an extension of our treatment group patients and as representatives of the community. The patient attempting to make lifestyle behavior changes needs the support of

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

Clinical research on health outcomes is a critical component of community health because it builds the body of evidence that supports effective prevention efforts. This research study demonstrates how clinical research compliments and support community based efforts. What is somewhat unusual, however, is the strong emphasis of the evaluation on implementation and program process. Few evaluations include this critical information. Attention to process is important for several reasons. First, the fidelity of implementation must be demonstrated, to avoid a Type III error: the failure to detect a program effect due to poor implementation. Second, process evaluations provide important information for successful replication, and yet implementation descriptions are often not widely disseminated. Third, analysis of the intervention process provides information that is relevant to front line practitioners, the "doers". Failure to assess features of implementation, such as provider and patient satisfaction with the services, will make even the most effective intervention difficult to replicate. The literature on barriers to evidence based practice in clinical practice has pointed to the failure of outcomes research to address features of services that are meaningful to patients and providers, along with the outcomes that are meaningful to policy makers. The LOVAR study clearly has confronted this potential problem head on by making implementation and utilization "outcomes" primary in their investigation. This is a model evaluation that will provide useful information at many levels.

family and close friends. Significant others are invited to social support events as well as health education sessions involving nutrition, weight management, fitness, stress management and tobacco cessation.

Sponsoring annual conferences in collaboration with other community agencies, volunteer organizations and coalitions concerned with vascular disease. Conferences are designed to promote community awareness of vascular disease and of the LOVAR study, and to educate and motivate community members to make their own healthy lifestyle changes.

Providing professional and community lectures/presentations on vascular disease and LOVAR scientific activities. We will offer continuing education opportunities for primary care physicians on such topics as the standardized blood pressure guidelines, documentation of tobacco-use cessation and assessment of patients' readiness to change. We will also offer presentations to community groups, organizations, business and industry and special patient populations. Pharmaceutical companies have offered to support LOVAR through educational programs for the community and physicians on appropriate topics.

Continuing our involvement with the Allentown Health Bureau and with the Centers for Disease Control and Prevention APEX model for cardiovascular disease. LOVAR and Lehigh Valley Hospital health promotion staff are involved in assessment, planning, implementation and evaluation of programs addressing cardiovascular risk factors in the community.

Collaborating with local organizations such as the American Heart Association, American Diabetes Association, Lehigh Valley Dietetic Association, Cedar Crest College Allen Center for Nutrition, Coalition for a Smoke-Free Valley, Lehigh Valley Senior Citizen Center and numerous other not-for-profit and grassroots groups, especially those associated with MESH (see chapter 1). Through these partnerships, we can provide further education to the community on prevention, detection and management of vascular disease.

Continuing to provide supermarket shopping tours for patients and their significant others, while also developing a cooking school and related activities with the Lehigh Valley Restaurant Association and Allen Center for Nutrition. One goal will be to offer more healthy entrees and foods to the community.

Activating volunteer groups to assist with community health education efforts. Volunteers might even include LOVAR patients and their significant others. It is known that volunteering is therapeutic in supporting lifestyle behavior changes.

Helping to launch population health status management as it relates to vascular disease prevention within Lehigh Valley Hospital and PennCARE. LOVAR can assist with refining critical care "maps" or clinical guidelines on CCPVD care and disseminating them throughout the system. We will also contribute to ongoing education sessions and work groups for physicians and clinical staff.

Influencing health policy by demonstrating the cost-effectiveness of preventive interventions. If LOVAR can prove that its program carries a reasonable cost, our scientific design, strategies and interventions have a greater potential of being replicated elsewhere within PennCARE. We can serve as a model for integrating medicine, public health and the community, while laying the groundwork for reimbursement of preventive services in the region.

Implementation and Innovation

If the design of LOVAR was sparked by the need to address the human and economic costs of vascular disease in the Lehigh Valley and nationally, the burning issue is the failure of Medicare and commercial insurers to adequately cover many preventive care expenses for these high-risk patients. Moreover, while the medical community knows a great deal about the risk factors that can lead to vascular disease, much less is known about how to help people change a complex constellation of behaviors so they can

live longer, healthier lives. And physicians do not have the time or support structures to educate their patients in lifestyle modification. Finally, little is known about how to help physicians, prevention specialists and administrators put together comprehensive, cost-effective case management systems to help patients achieve their goals. These were the challenges set before the LOVAR team.

Both John Castaldo as principal investigator/medical director (representing medicine and research) and Jane Nester as co-principal investigator/administrative director (representing public health, prevention and health services administration) have functioned as "boundary spanners." They have orchestrated and motivated discussions on organizational structure, scientific research design, communication strategies, financing of the study, and database development, management and marketing efforts. Each investigator translates to the other their expertise in the field of medicine and community health so that concepts and issues can be explained in understandable language to the constituencies they seek to influence.

Accomplishments

In the past three years, LOVAR leaders have:

- **Formed an executive committee** of 14 primary care and specialty physicians to give direction and clinical expertise to LOVAR's scientific design, patient flow and case management process. This group meets at least quarterly for case study reviews. We keep the physicians abreast of our progress through monthly email communications, and the LOVAR team meets weekly to discuss operations, recruitment and patient flow.
- **Designed the five-year prospective cohort controlled study**.
- **Acquired space** designed to bring people together in a comfortable and consistent "home base".
- **Built a collaborative team** with broad experience in neurological and cardiovascular disease and public health. The team's mission is to educate, lead and motivate patients, family members and physicians in the principles and concepts of LOVAR.
- **Conducted a successful feasibility study** (1998) enrolling 50 patients prior to the start of the five-year study.
- **Completed a successful first year** (1999) of the five-year study. Of the 500-patient goal, 229 have entered the study as of this writing. Six-month results are measurably positive in patient risk factor behavior changes, patient and physician satisfaction, patient quality of life, and sustainability (no drop outs or crossovers). To date, 193 physicians from 13 counties have supported LOVAR study methods.
- **Procured grant monies** including $4.1 million from the Pool Trust for the developmental year, feasibility year, five-year study period and sixth year of data analysis and publication; $1 million from Lehigh Valley Hospital in the form of in-kind services to support the study; over $1 million from pharmaceutical companies in the form of medications for our patients; and approximately $500,000 from pharmaceutical companies for operations and marketing. This adds up to more than $6 million for program development, patient case management, marketing, data analysis and publication over an eight-year period (1997-2004).
- **Built a sustainable and useful preventive medicine intervention program** for patients, family members and physicians.
- **Built a comprehensive database** to analyze primary and secondary outcomes and to follow patients' progress through the program.

What Helped the Collaborative Process?

- ***Senior management support*** from our CEO, COO, chief medical officer, chair of community health and health studies, medical staff president and numerous senior managers in the early development of the collaborative process. We have kept them informed of progress and challenges along the way.
- ***Orientation as a "learning organization."*** Lehigh Valley Hospital has been working to create a "learning organization" environment over the past five years and seemed ready for this type of

collaborative endeavor.

- ***Physician champions***. To achieve early and ongoing "buy-in" for the LOVAR study, we identified a broad mix of physicians as potentially supportive leaders and nurtured these relationships.
- ***Grassroots approach*** with a "go slow to go fast" philosophy. We spread ownership of the project among physicians, administrators and nurses, identified common agendas and built consensus to achieve win/win scenarios for everyone.
- ***Multidisciplinary approach***, including "asset mapping" of the talents, skills and expertise of all those interested in the LOVAR collaborative process. We identified resources in the same way. This contributed to a Total Quality Management (TQM) process in which resources were shared rather than duplicated.
- ***Group contributions***. Everyone contributed to grant writing and fund development, which helped secure eight years of financing for LOVAR. We established networks to connect community agencies, business leaders, pharmaceutical companies and other potential grantors.

What Hindered the Collaborative Process?

Hindrances included patient factors, factors within the health-care setting, and social and political health system factors, but the most challenging were the physician issues described below:

- ***Territorialism***. Physician specialists often view their care of patients and diseases with fierce protectionism. These "turf" issues can pit cardiologist against primary physician, vascular surgeon against neurologist in developing patient care strategies. Unfortunately, the result is rarely better collaboration or better care of patients with complex vascular disease.
- ***Personalities***. Experience has shown that cardiovascular and neurovascular physicians generally believe "too many chefs spoil the broth." These strong, opinionated personalities, each with a different view of vascular disease and their role in managing it, created significant barriers to the LOVAR collaborative process. Collaboration takes time and compromise and can strain other resources. It is not a comfortable way of doing business for staunch individualists.
- ***Reluctance to change***. The profession of medicine is an ancient one bound by the Hippocratic oath of "do no harm." The group ethic is to be skeptical of innovation and slow to embrace it until it has been soundly proven. Hence, forward movement—even when the change makes inherent "intuitive" sense—is almost always at glacial speed. This tendency worked against LOVAR, which needed to generate great change in a very short span of time.
- ***Referral patterns***. These patterns develop over many years and are based on physician availability, affability and ability, often in that order. The LOVAR process is designed around physicians who are community champions in their fields and have demonstrated measurably high quality of care. Primary care physicians tend to be slow to refer patients to new personalities, especially when they are satisfied with their current referral pattern. LOVAR needed to overcome this bias in a non-threatening way before it became a sizable barrier to progress.

The Role of Leadership in Pioneering Change

How do we achieve a community change process in a milieu of complex diseases requiring multiple specialists? How do we innovate in an environment of cost-containment, skepticism and conservatism when the better outcomes we seek have not yet been proven? At the heart of the effort were the LOVAR "boundary spanners," who needed financial savvy, common sense, and many leadership and managerial skills, including:

- visionary abilities to help lead and create something greater than what they could do alone;
- passion, energy and optimism about what they do;
- a blend of clinical, business and managerial expertise;
- excellent problem-solving, strategic planning and negotiation skills;
- interpersonal and active listening skills necessary to build and nurture relationships;
- tenacity and persistence when the going seemed slow and tough;
- the ability to motivate and build work teams;

- the ability to teach, delegate and get others involved;
- the ability to hire qualified staff with the right expertise, people skills and personality;
- the ability to handle complex multiple priorities and adjust to change quickly; and
- the ability to influence colleagues through excellent written and oral communication skills.

Impact on Health Policy

Managed care organizations including HMOs are very interested in the case management (or disease management) process for high-risk patients. In terms of policy development, we hope that by the end of the five-year LOVAR study, we will convince:

- third party payers to reimburse for coordinated case management and prevention services;
- physicians to see this collaborative process as complementary and non-competing with their work;
- other community hospitals to see value in developing a comprehensive Circulatory Center to care for high-risk vascular patients;
- the community that LOVAR processes will ultimately benefit them by improving health status and quality of life.

Conclusion

The LOVAR study was founded on the need to prevent an epidemic of cardiovascular disease from escalating to a pandemic in our country, with skyrocketing healthcare costs for tertiary intervention. LOVAR attempts to validate the effects of prevention strategies in regressing and stabilizing vascular disease, improving the health status of the community and improving physician and patient satisfaction with the process. Overall, LOVAR presents an opportunity to bring these efforts together with new synergy, energy and innovation. The study required people of passion with knowledge in vascular disease, epidemiology and prevention. It was built from the bottom up, using the knowledge and experience of existing experts in the community and proving in its feasibility year that the data collection process is achievable. LOVAR faces up to the challenge of the cost burden inherent in preventive medicine and seeks to prove that prevention and coordinated case management for high-risk vascular patients are "good business" for healthcare insurers as well as healthcare providers.

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Medicine in the Community: Learning to Serve and Innovate – Lehigh Valley Hospital's Strategic Plan for Education

ROBERT J. LASKOWSKI, MD, MBA, AND MARTYN O. HOTVEDT, PH.D.

Background

Lehigh Valley Hospital is a "mission driven" organization[1]. Our basic focus remains true to the founding vision: service to the community by helping people regain and preserve their health through excellent and accessible health care services.

The hospital has long recognized the importance of education, both as an intrinsic good and for what it can offer indirectly to the organization. A re-examination of the role of our education program in 1995 culminated in a Strategic Plan for Medical Education entitled *Medical Education in a Community Model of Care*. We based this plan (the first of its kind for our organization) on principles articulated by the Pew Commission on the Education of Health Professionals[2], and organized it around seven initiatives:

- Become a national model of community-based medical education.
- Facilitate collaborative educational relationships with community-based partners.
- Support creative and innovative faculty teaching and educational research.
- Expand the role and significance of research into medical education.
- Incorporate evolving information technologies into medical education.
- Redesign the Office of Education and develop integrated systems to support strategic initiatives for medical education.
- Develop stable and innovative funding for medical education.

These initiatives spawned objectives and specific action plans. Our overall goal was to firmly establish a community focus to Lehigh Valley Hospital educational programs.

Accomplishments of *Medical Education in a Community Model of Care*

The implementation of the new strategic plan resulted in a number of concrete accomplishments, some of which are described below. The Pew Commission notes that the practice of medicine fundamentally relies on the coordinated efforts of many health professionals working together in a system of care. Accordingly, one of our major initiatives was to reorganize education at Lehigh Valley Hospital into a more coordinated whole. We created the Center for Educational Development and Support (CEDS), bringing medical education (graduate and undergraduate continuing medical education), nursing education, academic information and support services, continuing education, pre-professional education and patient education into a single administrative infrastructure. CEDS' goal is not simply to coordinate activities across disciplines, but to stimulate creative learning for the purpose of better meeting the complex, interdisciplinary needs of the patients we serve.

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Learning technology development

Howard Gardner, is his book *Frames of Mind*,[3] notes that intelligence is usually thought of as an individual attribute that varies from person to person. He points out that it can also be considered in a contextual framework, in which the tools of learning—books, computer, Internet, etc.—are critical parts of "intelligence." Several of the major initiatives in the strategic plan focus on the use of learning technology. Among the major accomplishments in this area are:

- **Meyer Cohan Learning Resource Center**, a state-of-the-art facility with 15 fully-equipped computer stations, a central teaching station and a specialized projector for various types of video and audio transmission.
- **Videoconferencing/teleconferencing hub** connected to the Learning Resource Center, which allows sessions conducted there to be distributed across all Lehigh Valley Hospital campuses and linked with the Pennsylvania State College of Medicine and other organizations. The hub is capable of 65 simultaneous transmissions to multiple locations. We are wiring classrooms and auditoriums so they can interact through the hub and eventually provide telemedicine at multiple sites. Interactive learning sessions from two operating rooms to the main auditorium now occur regularly and are periodically shared with others, live across the nation.
- **Regional Symposium series**, a cornerstone of continuing education which has now changed its emphasis from traditional lectures to small-group learning sessions focusing on practical problem-solving skills. The redesigned series attracts national speakers who present new ideas and innovative research to healthcare practitioners in our region.

Exceptional Faculty awards

Faculty development has been a major component of many strategic plan initiatives. The Exceptional Faculty Assignment (EFA) awards program provides faculty members with mini-grants to develop educational activities that improve their own abilities and those of their peers. Thus, it supports faculty development—particularly voluntary faculty in private practice—by financially investing in their growth as teachers.

The EFA program also acts as a reward and incentive for faculty members. For example, an EFA grant permitted a rheumatologist to participate as a Harvard-Macy scholar. Through this experience, he developed an innovative program focusing on the role of graduate medical trainees as teachers. The rheumatologist has been invited to join the Harvard-Macy faculty, and we have been asked to send another member of our medical staff to the program. Other EFA faculty projects include computer-based evaluation systems for residents; pocket guides to clinical practice; an innovative ambulatory care rotation for medical students; a resident rotation in wound care (a particular problem in our region given the high prevalence of diabetes); and advanced faculty training in bioethics and humanities. This program has been successful in its focus on individual faculty development needs firmly rooted in a commitment to community service.

Community-focused educational activities of residents

Two of our former chief medical residents have completed their Masters in Public Health at East Stroudsburg University. This coordinated program with the university, a community-based educational partner, has also influenced many other residents' view of the role of medicine in the community. Their learning activities have begun to focus on community issues not addressed by traditional graduate medical education (GME) programs. For example, the Residents Association plans to develop a free clinic for the homeless in cooperation with local churches; and the Department of Family Practice now requires its residents to perform a community service project. (Other departments are expected to follow.) On a more global level, several residents have taken part in an educational exchange program with Moi University School of Medicine in Kenya. This Third World experience provided important lessons on the impact of economics and culture on health.

Learnings from *Medical Education in a Community Model of Care*

In addition to the achievements noted above, the first strategic plan has taught many lessons. First and foremost, our experience at Lehigh Valley Hospital demonstrates that the concept of "community oriented" medical education is a reasonable one, now and in the future. Our Board of Trustees and Community Advisory Committee have strongly endorsed the concept. Their acceptance of CEDS testifies to a new openness in education that sets the stage for even greater transformations.

Medical Education in a Community Model of Care has been an ambitious project with multiple related objectives and activities. Its sheer scope has posed significant management issues, often taxing our ability to maintain focus on the overall integration of the plan. Given the ambitious vision of the project, this breadth of scope in retrospect still appears appropriate. And our project management approaches have improved and sharpened with experience.

A tradition of past success in graduate medical education did, however, engender understandable resistance to change. The need for interdisciplinary education is difficult to envision when GME programs are filled with good residents, board certification rates average 100% and residency review committees return sterling evaluations. Nonetheless, the Departments of Family Practice and Obstetrics/Gynecology bridged professional barriers with innovative joint program development in obstetrics and primary care. The Graduate Medical Education Committee unanimously endorsed common educational time across residencies to address new core curriculum requirements of the Accreditation Council for Graduate Medical Education. As we continue to implement the concept of interdisciplinary learning, we will need to recognize and address the roots of resistance to change if we are to ensure future progress.

Challenges of the Future

Fiscal challenges

The future holds many immediate challenges for health care. The tremendous financial pressure, particularly on large teaching hospitals, is evident in the frequent reports of significant losses among the country's leading hospitals; but the precipitous revenue decline caused by the dual effects of the Balanced Budget Act and managed care poses threats to all hospitals. Our commitment to GME will be challenged, rather than driven by, economics. As GME ceases to be directly profitable, we will need to see the benefits of education in more indirect, but no less important, organizational and societal terms.

Lehigh Valley Hospital's historically strong financial position will be threatened over the next several years. Our practical challenge will be to demonstrate the value of education, not only to society but also to the organization. Education can and should be one of the fundamental tools for reshaping our hospital to meet the financial challenges to our mission of service.

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

This case study of a strategic plan to establish community focus in medical education demonstrates a systems response to recent recommendations to integrate public health principles throughout clinical practice, particularly through training of health care practitioners. LVH has gone beyond adding curricular components by building an organizational structure that provides both hands on experience for students and actual demonstration of coordinated and cross-disciplinary actions. In effect, the development of the educational program mirrors the community health service initiatives: collaboration across multiple and diverse disciplines, attention to developmental processes, continual evaluation and information feedback processes, and consideration of personal, historical and political factors that can influence implementation. The training program itself is a lesson in practicing what one preaches. Also importantly, LVH's efforts in medical education have benefit beyond the individual practitioner being trained. The community health initiative has clearly assisted the changes in the educational program. At the same time, the community health focus of the training program fits into the institutional mission and organizational culture of the hospital system. This synergism provides a mutually supportive environment that will contribute to the long term successes.

The same financial pressures impinge on physicians and those who practice with them. The prospect of declining personal income may have direct repercussions in terms of professional priorities. Paradoxically, many academically-based medical schools now speak more about "clinical RVUs (relative value units)" than about clinical research or educational proficiency.

Here at Lehigh Valley Hospital, we are not immune to these demands. The resulting pressure on our faculty's already scarce personal time, while perhaps less radical than for our academic medical center colleagues, is still significant. To the extent that education appears as a luxury to faculty, it will be at risk. Our traditions of educational service are threatened unless the paradigm of education changes to meet the future.

The consumer movement

The current recipient of health care is in many senses a "consumer." This term should not be considered solely in its narrow economic meaning, but rather in a larger sociologic sense. The "patients" of old are now much more active in their relationship to their health; witness the overwhelming interest of the elderly in their cholesterol levels. Our patients increasingly do not wait patiently for service, they demand it. They want to be educated about their health, not admonished. They are enamored of technology, they presume quality in health care, and they often judge it in terms of the quality of customer services received—promptness, attention to detail, "personalized" care and so on. New models of education must recognize the advent of consumerism, and further, learn to use its attributes in the pursuit of improved health.

The role of community

The recent rediscovery of the vital importance of community to individual health reaffirms principles as old as the work of Snow[4] and even Hippocrates.[5] Recent sociologic analyses document that a community beset with poverty and violence fundamentally diminishes individual health. Health care practitioners who view the health of the community apart from their own work do not understand the underpinnings of health. McKnight's recent work challenges those interested in communities to learn how to work within them.[6]

The work of McGinnis and Foege[7] recently has shown the importance of refocusing the work of health practitioners on root causes of illness. The futility of treating advanced disease while not recognizing its cause is self-evident, and irresponsible. It is not acceptable to practice medicine without a practical knowledge of how one's own discipline can contribute to reducing the incidence of new disease.

Technology

Clearly, technology has helped define American medicine over the last several decades. Sophisticated new methods of diagnosis and treatment (e.g. the human genome project) coupled with the information revolution will continue to transform medical practice. In this new century we will need to be well-versed in information technology and capable of rapidly acquiring new knowledge.

Why Education?

The economic, sociologic and scientific challenges described above form the milieu in which education must act. In view of current difficult realities and future organizational threats, the question is often posed, "Why education?" For us at Lehigh Valley Hospital, the answer is simple and powerful: Education is a major tool in helping us successfully carry out our mission of service in the future. It is less an end in itself, an intrinsic good, than a means to the end of improved health for the community we serve.

The role of education as a tool is best understood by considering the concepts of *mission* and *culture*. As noted above, Lehigh Valley Hospital is a "mission-based" organization—a concept recently advocated by the Association of Academic Health Centers as a useful way of characterizing the unique role of health care organizations.[8] The significance of this role for us is truly profound; service to the community determines how we prioritize our activities and employ our resources. The daily activities of a "mission-based" organization all relate (or should relate) directly to its purpose and values.

Organizational "culture" can be simply defined as shared values and *shared expectations of behavior.* Education historically has played a major role in cultural development, provoking and shaping major social change. On a smaller, organizational scale, an educational focus can have transforming effects for businesses (e.g., Motorola and the principles of Continuous Quality Improvement). Education helps drive culture by focusing attention on priorities and behaviors.

On a practical level, education at Lehigh Valley Hospital is a tool for helping define and reinforce community service values. Succinctly, we can think of it as a way of helping the physician, nurse, physician extender or administrator *practice better.*

'Medicine in the Community: Learning to Serve and Innovate'

During the past year, Lehigh Valley Hospital used a strategic planning exercise to reflect on and reaffirm our mission of service to the community. In considering our unique potential contributions (and relative advantages as an organization), senior leadership settled on *service* and *innovation* as characteristics that should be evident in our culture. Consistent with this vision, the revised Strategic Plan for Education is entitled *Medicine in the Community: Learning to Serve and Innovate.*

Our vision is that through education, we will be more effective in developing an organizational culture that supports a mission of service. The economic, social and scientific challenges noted above form the substrate for this evolution of culture. For our mission to survive, we must not only respond to the challenges but use them to our advantage. Peter Vaill in his book *Learning as a Way of Being*[9] describes the current business and social climate in terms of inexorable and constant change. He views the ability to manage change as a fundamental and essential skill in which learning is critical.

Our new strategic plan in its use of words signifies some changes in emphasis from the previous plan. *Serve* and *innovate* are intended to link directly to the organization's strategic direction. *Learning* emphasizes the utility of education as a tool to carry out our mission. Our view of education has expanded from the narrowness of *medical education* to *education* more generally, with special emphasis on the importance of multidisciplinary learning. The linkages forged in the design of CEDS are a foundation on which we can build a more comprehensive, coordinated, integrative approach to learning.

The principles underlying this approach are best summarized by Peter Senge in his book *The Fifth Discipline.*[10] Senge emphasizes the cultural significance of learning and argues that successful organizations are able to adapt to their environment as *learning organizations.* These organizations are characterized by specific disciplines or ways of acting. Personal competence is an important discipline, but only within the expanded context of group learning and interrelated behavior. Senge's observations apply well to Lehigh Valley Hospital and our relationship to the community. We need to learn in ways that maximize not only our personal competence, but also our ability to adapt to the surrounding environment and the complexities of our own system.

Vision of the Community Oriented Health Practitioner

Health care is a human endeavor, fundamentally dependent on the ideas and actions of healthcare practitioners. To provide a focus for the new strategic plan, we developed a vision of a "community oriented health practitioner." While locally based, this vision is consistent with the principles of professionalism articulated by the American Association of Medical Colleges. It also echoes the descriptions of a health professional by Richard Maudsley,[11] in *Healthy People 2000*,[12] and in the latest Pew Commission Report on Health Professionals.[13] *Healthy People 2000* describes health professionals in the following terms:

> "America's physicians, dentists, nurses, pharmacists, medical technicians and other health professionals must be not only knowledgeable in the basic and clinical sciences; they also must be life-long learners, excellent communicators, good team players, managers of scarce resources, health care visionaries, and community leaders."

The vision of the health practitioner encompasses multiple simultaneous roles. These roles reflect the need for individual development, but also place the practitioner firmly in the context of her/his community. The roles are:

- Health Practitioner as *Teacher*
- Health Practitioner as *Learner*
- Health Practitioner as *Health Advocate*
- Health Practitioner as *Community Leader*
- Health Practitioner as *Champion of Quality*
- Health Practitioner as *Community Servant*
- Health Practitioner as *Clinical Innovator*

In implementing the strategic plan, we will examine each project and activity through the lens of its effect in helping develop and reinforce the roles noted above. If practitioners act in ways consistent with these roles, our vision of education as a vehicle for cultural development will be real. Such a vision is certainly idealistic; however, the attributes of each role make it possible to critically evaluate specific educational activities for their fit with the hospital mission. For example:

- Being a *Champion of Quality* implies personal competence, a commitment to improvement, and willingness to be a role model—a particularly effective educational strategy in professional development.
- Being a *Community Servant* firmly establishes the practitioner's relationship with patients: *They* are the ones to be served, not the profession. This reversal of traditional power relationships is evident in the ways in which we teach and model communication skills.
- Being a *Health Advocate* implies not only personal advocacy for the patient's welfare, but more generally, an active awareness and participation in the health of the community.

The use of the multiple simultaneous roles concept can easily be incorporated into the evaluation of specific behaviors by faculty, staff and students. As such, it should serve as a vehicle to stimulate improvement.

Linkages

Our new strategic plan functions in the context of several other related programs and initiatives. Explicit linkages with these initiatives enhance the plan's chances for success.

- **MESH** (Measurable Enhancement of the Status of Health; see Chapter 1). MESH is not only an effort to better understand the health status of Lehigh Valley citizens, but also a vehicle for framing and implementing interventions to improve health status. MESH forms a practical basis for Lehigh Valley Hospital's educational initiatives, including the "Practice Paradigm" described below. MESH's recently completed Behavioral Risk Assessment (see Chapter 9) will be a cornerstone of educational design, and LOVAR (Lowering of Vascular Atherosclerotic Risk; see Chapter 5) provides a well-defined clinical practice model as well as research and outreach opportunities. Activities sponsored or supported by MESH have been and will increasingly become important educational venues.
- **Physician Leaders of the Lehigh Valley**. In establishing this program, Lehigh Valley Hospital recognized that clinical leadership by physicians is essential to making change in healthcare organizations. The new strategic plan will use the infrastructure of this program to help support faculty development. (And our vision of Health Practitioner as Community Leader is closely related to the program's purpose and activities.)
- **Care Management Systems**. Both the healthcare financial crisis and our vision of Health Practitioner as Champion of Quality necessitate a strong role for the Department of Care Management Systems in the design, implementation and evaluation of educational initiatives. Education can be a vital tool in helping the organization *practice better* through prudent and creative care management.

- **Department of Family Practice**. This department, through its version of community oriented primary care, serves as a model of community focus (see Chapter 8). We will generalize the learnings from Family Practice where they are applicable to other departments' formal educational programs.
- **PRIDE** (Privacy, Respect, Integrity, Dignity and Empathy). This service initiative espouses the principles of patient-centered care. After the program was implemented, Lehigh Valley Hospital's patient satisfaction scores rose dramatically. The vision of Health Practitioner as Community Servant and Teacher echoes PRIDE's philosophy. Both PRIDE and the more extensive Service Excellence initiative,[14] which develops the role of health advocate for all Lehigh Valley Hospital employees, are being incorporated into educational planning and evaluation. PRIDE concepts are now included in the performance appraisal system, hiring process, new employee orientation and reward/recognition program.
- **Community based organizations**. Lehigh Valley Hospital has had excellent relationships with service and educational organizations. These range from a jointly sponsored MPH initiative with East Stroudsburg University, to a Physicians Assistant Program with Allentown College of St. Francis de Sales, to resident rotations at Casa Guadalupe (a social service agency for Hispanics).

Strategy

Medicine in the Community: Learning to Serve and Innovate strives to use professional education as a tool to change our culture and develop our hospital as an organization that serves its community well. This approach demands a clear vision of the type of culture that will best guide our educational work. Using the multiple roles of the health practitioner will assure constancy of focus despite the breadth of the efforts required to implement cultural change. Our major strategies are as follows:

1. Build on the success of the past. Building on the successes of our first strategic plan, we will continue the national activities that led us to develop our model for medical education. These include making presentations at national forums and conferences; encouraging our faculty to publish articles describing their innovative activities; and continuing to collaborate with community-based educational organizations, from junior high school through graduate school and adult health education. Several of these latter programs are just emerging and already we see their benefits. For example, we are developing a healthcare-focused MBA program with Allentown College of St. Francis de Sales and collaborating with nursing schools to address anticipated nursing shortages in specific areas.

Lehigh Valley Hospital is recognized nationally for being at the leading edge of technological innovation, as witness the Meyer Cohan Learning Resource Center discussed above. We plan to further develop videoconferencing as well as a telemedicine system that will allow outlying physicians to deal directly with our clinical faculty. Such a system will relieve many patients of the need to travel for high-quality medical care.

Two ongoing concerns flowing from past successes are the development of CEDS and the funding of medical education. Neither of these will ever be totally solved. CEDS must continually evolve as our faculty improve and as educational issues shift toward problem-solving. Funding of education, in a practical business like a hospital, will always have to be justified based on the results it produces. Just as large corporations have substantial budgets in research and development, community-based hospitals must devote some portion of their budget to continually improving what we do.

2. Employ effective principles of education. The educational principles underlying our program can be summed up as follows: A hospital is a place where health professionals practice, and education supported by the hospital is intended to help them improve their practice so they can provide better patient care. We do not define "practice" narrowly as just what a physician does, but rather what all hospital employees do. Every employee at Lehigh Valley Hospital must continue to improve and become a better problem-solver; and the hospital should support education that facilitates this. A major tool in supporting creative teaching is the EFA program (described above), which has proven very successful to date. We plan a variation of EFA, providing funds to residents who would like to conduct research on educational program improvement.

3. Learn from what we do—evaluate effectively. Better evaluation techniques will provide more complete descriptions of our successes and failures, and more insight on how to improve.

4. Create Practice Paradigms for the Management of Health and Disease. This strategy involves a longitudinal, multidisciplinary intervention effort focused on specific issues highlighted by the MESH initiative and/or Care Management Systems. The intent is to have attending physicians, nurses, residents, medical students and others collaborate on the design, implementation and evaluation of disease management and health prevention projects of value to the community. These Practice Paradigm interventions will serve as models of professional behavior both in content and in implementation; will demonstrate the value of interdisciplinary learning; and will emphasize that medicine is practiced in the context of community. Three specific issues have been identified for the first Practice Paradigms: diabetes, family violence and deep vein thromobosis.

5. Practice effective change management. Since the strategic plan focuses on cultural development and change, the effectiveness of our change management methods will be critically important to our success. Effective change management requires several critical enabling factors:

- a clear sense that the current situation is no longer desirable and that there is a better alternative;
- strong senior leadership who articulate a vision of a future state[15];
- people who are willing to change;
- appropriate rewards and incentives for change;
- availability of information critical to change; and
- organizational structures adaptive to change.

These multiple, interacting factors must occur simultaneously for change to happen.

At Lehigh Valley Hospital, the pressures of declining revenues coupled with increasing consumer demands provide a powerful force for change. Current trends in healthcare delivery simply are not sustainable. Education can use these forces of instability to forge new ways of caring for the community that respond not only to economics but to fundamental issues of community health. Good education incorporates economic, epidemiologic and social issues into new ways of monitoring and restoring health.

Medicine in the Community: Learning to Serve and Innovate has the support of the highest levels of leadership at our hospital, and Physician Leaders of the Lehigh Valley is developing a cadre of able clinical leadership to help manage change. Finally, CEDS provides a creative organizational structure open to change, as well as an information base to support it.

Implementation and Evaluation

A new entity, The Educational Planning Council (EPC), will provide focused clinical leadership and oversight as we implement the details of the strategic plan. The EPC will be composed of three to five physician educators (CEDS "Senior Fellows in Education"), the chief residents from the major postgraduate medical education programs, and nursing education leadership. Its multidisciplinary nature will model the coordination and collaboration we envisioned in the plan as a critical element of good healthcare practice.

A great deal of time, effort and money has gone into carrying out our first strategic plan, and we will expend even more over the next four years. Evaluating this process is crucial to both the community and the educators involved. How will we know if we have accomplished a change in culture? We plan to conduct a qualitative assessment, using an evaluation model developed by Robert E. Stake.

This method involves collecting data throughout the three-year period not only on the outcomes of our actions, but also on their intent—through the observations and judgments of stakeholders. This type of qualitative evaluation yields rich information that will help us interpret our successes and failures and provide guidance for improvement. The process should show us not only *if* we have changed the culture, but *how*.

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A Quantitative Model of Community Health

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CONTEXT

The capacity to measure individual health status has developed greatly over the past decade. From detailed studies of the best single question about one's health, to the application of sophisticated surveys in populations, health status measurement has received broad attention in the medical literature. General health status measures, such as the Medical Outcomes Study Short Form 36 (SF-36), and Short Form 12 (SF-12) have been used in increasingly broad settings, in many populations, and in a growing number of languages. Disease-specific outcomes measurement has also flourished. The drive to measure health status has both stimulated and benefited from new science in psychometrics and measurement.

Population health status measurement represents some of the earliest descriptive measurement of health. The use of vital statistics to report births and deaths, for example, was one of the earliest public health functions practiced in the United States. Infant mortality has been viewed as an important tracer condition to describe the health of a society or population. Similarly, life-expectancy, disease- or cause- specific incidence or mortality rates have been other important markers used to describe the health of a population. Economic data and educational attainment are examples of two non-medical characteristics that can be used to describe the well being of a population. Along with specific demographic and geographic variables, these have come to be known as social determinants of health. Despite a long history of using measurement to describe a population's health, no model both integrates individual health status with population or community health, and supports measurement and evaluation. We describe an early form of such a model. This model is an attempt:

1. to portray the community and population health as dependent upon the health of the individuals in that community;
2. to illustrate the impact of community characteristics as effect modifiers of the health of individuals and communities;
3. to integrate models for measuring health with those that measure the risk of subsequent illness, particularly those related to behavioral risk factors; and,
4. to incorporate the observation that the addition of resources to a community can have a variable effect upon the health of the community, depending upon the baseline state of the community.

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INTRODUCTION TO THE MODEL

Our model postulates that community health is dependent upon two key factors: the health of the individuals who comprise the community; and the impact of the community structures upon the health of each individual. At any moment in time, each individual contributes a certain amount of health to the population or community health. We believe that the close association of a wide range of behaviors (e.g. tobacco abuse, unsafe sexual conduct, drunken driving, obesity and sedentary lifestyle, poor oral hygiene, etc) with health outcomes necessitates an integration of such risk behaviors into a measure for health. Thus, we consider an individual's health to represent both the current physical and emotional state of well being, and the probability distribution of the likely future health status given current behavioral attributes in the current community setting. There are mathematical constructs (see Appendix) that allow us to quantify how this should be done for each particular behavioral risk factor. Theoretically, one could predict future health at each point in the future until death, based on current health status, the presence or absence of healthful or risky behaviors, and the community's impact on health. To illustrate this last point, a community with an active tobacco cessation effort will remove that behavioral risk from a number of smokers in a community, thus affecting the predictions of future health. This demonstrates the dynamic nature of health, and the fact that over time community factors influence future health.

Several implications of this model become clear:

- local culture, community standards, and community resources can modify the individual's health over time. They may also modify the impact of behavioral risk. For example, smoking may have a different health impact in a pristine environment than in a heavily polluted one.
- at an individual level, the presence or absence of behaviors that impact the likelihood of a disease (so-called "risk behaviors") are considered when we measure the individual's health, proportional to the likelihood that they will impact an individual's health over time. Thus reduction in cigarette smoking is considered a current health gain, rather than a future gain. To quantify the gain in a particular area would require knowledge of the attributable fraction of the disease that's due to smoking, the induction period for the illness, and the impact of competing causes of mortality on the likelihood of the effect being realized in that individual.
- changes in environment can impact health in two ways: directly by improving current functional status, and indirectly, by modifying the danger inherent in local risk behaviors. Thus, a reduction in airborne pollutants may immediately improve an asthmatics current health status, the modification of dangerous intersections may reduce the risk of motor vehicle collisions associated with drinking and driving, and fluoridation of water may improve the likely health status in terms of oral health.

Although this model is based on the idea of an interaction between the community factors and the individual's health, we assert that at any moment in time, the community factors are independent of the individual's health. In other words, whatever their previous and future effects, community factors can only effect an individual's health over some period of time. Symbolically, we can represent the model as follows:

$$\mathbf{PH = \Sigma\,[(IH)_i * (CI)_i]\text{ , and at any moment in time } PH = CI * \Sigma\,[\,(IH)_i\,]}$$

where PH = Population Health ; IH = Individual Health ; (CI)i = Community Impact on the individual's health, and IH = the total of the community impact on the population's health. When comparing the health of populations, the average health becomes an appropriate metric,

$$\mathbf{H = PH / N = (CI * \Sigma\,[\,(IH)_i\,]) / N}$$

where H = the average health of a community or population and N is the size of the population.

The formal mathematics are found in the appendix but the most important features are conceptual. Community health is a characteristic of a population within a community, not just of the community or the population. Health is influenced by the constitution and behavior of the individuals in the population, their exposures to causes of illness, and the community's impact on all of the above. Community can be defined as a neighborhood, a town, a state, a region, a nation, etc. The model considers the over-

all influence of community to represent the multiplication product of each relevant component level of aggregation.

The model postulates that CI and each component have normative values of one. Conceptually CI encompasses social and environmental determinants of health and functions as an effect modifier on health. The model implies that in a typical situation, the major determinant of community health over any short time period is individual health. However, in areas of sufficient deficit, the impact of community can be an important determinant, and may be a critical target for health improvement. Thus, in some inner cities, a dramatic improvement in health may result from relatively small improvements in C.I. This aspect of the model also provides a framework for thinking about how, for example, violent deaths may be several orders of magnitude lower in the United Kingdom than in the United States, where a significant safety deficit exists.

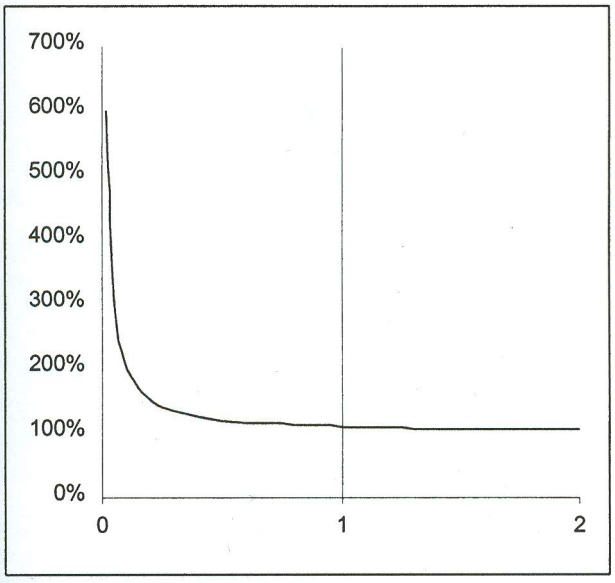

Figure 1. Demonstrating the relative increase in community impact (C.I.) that occurs if C.I. is increased by by 0.1 absolute unit. Thus, it becomes clear that a marginal increase in C.I. of a given amount is expected to have a much greater impact when it is correcting a deficit (i.e., baseline C.I.<1), then when it is adding to assets in a functional community (i.e., baseline C.I.>=1).

The model predicts larger marginal impacts from interventions that correct dysfunction, than from those that improve normative functioning or add assets to well functioning communities. In practice, CI is likely to be bounded at the top, but not at the bottom. In other words, not only are dysfunction and danger in the community more likely to have dramatic effects on health than is the presence of an asset, but dysfunction can always get worse and there are probably practical limits to the benefits from additional assets in a well functioning community (i.e. law of diminishing returns).

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

Community health initiatives have defied traditional scientific paradigms that pervade the field of evaluation. Their internal complexity, dynamic nature, and spatially fluidity make control for alternative explanations of effect extremely difficult. The literature is full of community health improvement experiments that yielded less than satisfactory results due to break-downs in experimental design and control. Given the growing emphasis on demonstrating effectiveness and direct causal relationships between interventions and outcomes, evaluators have sought new ways to provide reliable and valid tests that do not repeat problems of the past. The model presented here is a significant contribution to the choice of methods available for evaluating community health programs. The model adds dimensions to thinking about how community interventions might work, most notably the notion of context. Tightly controlled evaluation studies achieve internal validity often by eliminating the external, community forces that might affect results. Rather than controlling these contextual factors, this model embraces them and determines their role in program performance. This approach will not only provide a better understanding of how program work in a given context but also facilitate modifying successful programs to fit new contexts.. The model also adds the dimensions of time and risk of effect, factors that has long been difficult to accommodate in community health evaluations. Outcome evaluations are usually structured to assess the relatively short term results, while we know that effects may take a lifetime to be realized. This is a significant step forward in the science of evaluating community health improvement programs.

Community change that results from efforts directed towards community improvement is seen as having two components: health related change (HRCC) and other community change (OCC). Health related changes are those that can impact individual health status as time approaches zero, for example, a change that reduces a specific risk behavior, such as smoking, or that improves access to immunizations, or that lowers the fat content of school lunches. To be recognized as health related change requires at a minimum, a model that includes a mechanism of action that describes how short term health improvements are to be achieved, or how health will be improved over time. Community changes that may or may not lead to better health in the longer term, such as economic development activities, or literacy, but that do not have a short term impact on individual health, are considered to be HRCC only to the extent that they can be predicted confidently to improve the trajectory for future health status.

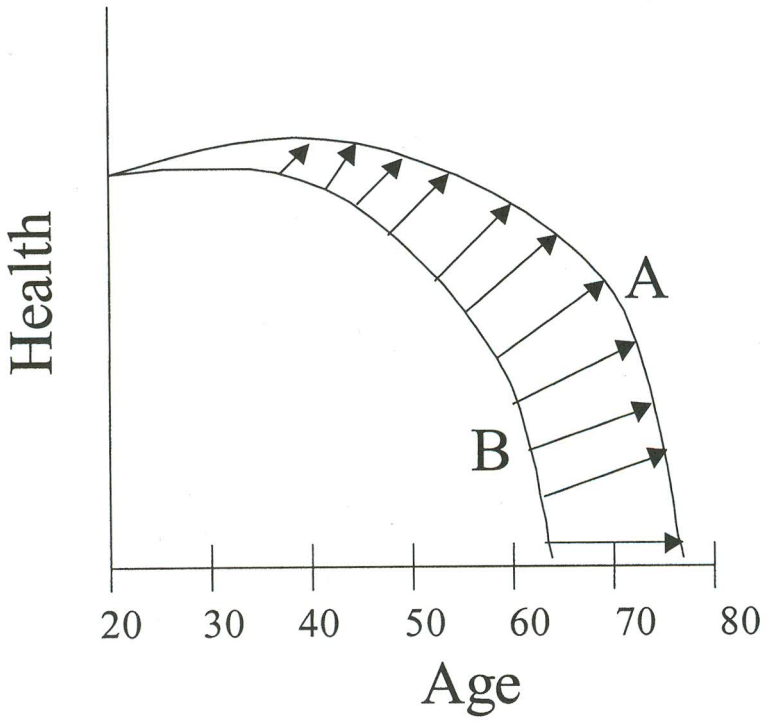

Figure 2. This figure demonstrates two projected (individual) health curves for 20 year-old smokers of equivalent health. Curve A illustrates his health of the one who quits smoking, and Curve B the one who does not. The area under each curve (discounted to present value) represents the value that the model would consider the individual's health (IH). The area occupied by the arrows is the cumulative difference in health for the two individuals. It represents the health benefit to the individual for having quit smoking.

The model accommodates the fact that community improvement activities may attempt to improve health directly and/or by improving the impact of the community on health (CI). Indeed, the impact of community interventions on the health of the individuals in the community can be expected to be variable. Some interventions can be expected to benefit health directly (e.g. programs to reduce youth smoking and increasing access to medical care), some indirectly (e.g. new bus routes make medical clinics more accessible), and some not at all in the short term (e.g. general community economic development). Even those interventions which do not have an initial impact on health, may have a direct, short term impact on health, in the future. For example, economic development in a rural area may lead to a larger population and an influx of health care providers to serve that population. The extent to which a community intervention leads to a predictable improvement on the trajectory of future $\Sigma(IH)_i$ in the community represents the amount of health improvement than can be credited to the intervention.

MEASURING POPULATION HEALTH USING BRFSS

When measuring the health of a population or community, many disparate measures may need to be aggregated. Data with different normative values need to be presented in a form that permits both comparison and aggregation. As we have already acknowledged the impact of behavioral risk factors on population health, we use the example of the CDCP's Behavioral Risk Factor Surveillance System (BRFSS) to illustrate a strategy for bringing together dissimilar data.

We have developed a system for aggregating data from individual measures into scales and across disparate scales into global measures. The following table represents our local data, scored we describe below, using the Commonwealth of Pennsylvania BRFSS to norm our distributions.

	North Lehigh %, Points	Slatebelt %, Points	South Easton %, Points	South Bethlehem %, Points	Allentown %, Points	Northampton County %, Points	Lehigh County %, Points
General Health	83.3 5	85.4 3	89.3 1	93 1	86 2	89.3 1	87.5 1
# of days Physical Health Not Good	4.7 5	5.7 5	3.2 2	3.4 3	4.5 5	4.1 5	4.2 5
# of days Mental Health Not Good	4.3 5	5.3 5	3.6 5	3.4 5	2.5 1	3.5 5	3.3 5
# of days in Past 30 Days Activities were Limited	3.6 1	5.2 5	5.4 5	5.4 5	7.2 5	4.9 5	4.7 5
No physical activity	27.9 1	33.6 1	24.5 4	20.0 1	22.5 1	25.6 1	21.5 1
No Regular and Sustained Physical Activity	83.3 5	85.5 5	75.1 1	76.6 1	84.3 5	81.3 4	81.9 5
No Regular and Vigorous Physical Activity	92.8 5	96.9 5	88.5 5	85.0 5	91.9 1	91.9 5	90.9 5
Tobacco Use (Current Smokers)	24.2 3	31.1 5	21.2 1	27.2 5	18.0 1	22.2 1	20.4 1
BMI (WNL)	66.9 1	63.6 5	73.4 1	78.4 1	68.7 1	68.7 1	68.0 1
Five + Servings of Fruits & Vegetables/ Day	19.3 5	29.3 1	18.4 5	27.7 1	21.1 5	24.3 3	22.5 5
Preventive Health: Mammograms (Ever had a Mammogram: age 18 and over)	61.4 4	56.5 5	60.0 5	31.9 5	56.3 5	61.2 4	62.3 3
Preventive Health: Pap Smears (Last 3 Years)	78.2 5	80.6 5	85.6 1	80.8 5	85.5 1	79.7 5	81.7 5
Injury Control: Always use a Seatbelt	65.7 1	69.0 1	71.2 1	62.1 5	75.4 1	64.5 4	67.8 1
Injury Control: Tested Smoke Detectors in Past 6 Months	66.5 5	69.6 5	64.6 5	60.1 5	67.4 5	64.2 5	66.5 5
Chronic Drinker	3.3 2	3.4 3	5.9 5	11.6 5	4.0 4	3.8 3	4.2 5
Acute/Binge Drinker	17.9 5	18.0 5	16.6 2	20.6 5	17.1 3	14.9 1	17.3 3

The following table represents the same data aggregated into scales and a global score.

COMMUNITY HEALTH INDEX – PREVENTION (CHIP)

DOMAIN	Lehigh County				Northampton County		
	County Total	Northern Lehigh	Slatebelt	Urban Allentown	County Total	Southside Easton	South Bethlehem
Overall Score	3.3	3.5	3.9	3.2	3.1	2.7	3.2
General Health	4	3	4.5	3.5	4	3.25	3.5
Female cancer	4	4.5	5	3	4.5	3	5
Prostate Health	1	4	1	1	5	5	1
Health Habits	2.6	4	4.8	2.6	2.4	1.8	1.8
Injury Control	2.8	2.6	2.8	2.6	2.6	2.6	4
Alcohol Abuse	4	3.5	4	3.5	2	3.5	5
Physical Activity	3.7	5	4.7	3.7	3.3	2.3	1
Tobacco Use	1	4	5	1	1	1	5
Diet and Nutrition	3	3	3	3	2	3	1

Ideally, we would like to measure and report data in a fashion that:

- Allows meaningful aggregation within health domains
- Allows meaningful comparisons across health domains
- Allows meaningful comparison from one population to another
- Demonstrates meaningful variation

In approaching this problem, we recognized that distributions have long been recognized as a valuable way to describe data. The standard score, defined as the individual value less the mean, divided by the standard deviation, represents individual values as the number of standard deviations above or below the mean. Standard scores represent a sensitive and accurate method for reporting disparate data. However they can be cumbersome to calculate, when aggregated, insignificant differences can be exaggerated in the aggregate score, and their definition makes weighting scores based on a conceptual model problematic. We propose converting raw scores into points that are based on the conceptual model and the distribution. For example, in a typical case, where the meaning of value differences is symmetrical around the mean, one could collapse the distributions into five regions and assign point scores as follows:

Percentile	Points
0 – 10	5
10 – 25	4
25 – 75	3
75 – 90	2
90 – 100	1

Percentiles should be derived from appropriate reference populations. The number of regions into which a distribution is divided and the boundaries of the regions can be adjusted on theoretical grounds. The following demonstrates the five-region scale that might be used if the variation of interest lies only among those performing below the median. Please note its asymmetry around the median:

Percentile	Points
0 – 5	5
5 – 15	4
5 – 25	3
25 – 50	2
50 – 100	1

Similarly the following demonstrates division into seven regions that might be used when smaller changes in percentile around the middle region were viewed to be substantively important:

Percentile	Points
0 – 10	7
10 – 25	6
25 – 40	5
40 – 60	4
60 – 75	3
75 – 90	2
90 – 100	1

When very small variations are substantively significant, the standard score becomes desirable.

Not only can the point assignment within the distribution be important, but the total points for any attributes can be weighted according to a conceptual model. Thus, if the incidence of cancer is felt to be twice as important to the health of the community as the incidence of gall bladder disease, it can be so weighted. Similarly, risk behaviors and community attributes, such as literacy or per capita library books can be incorporated into the population assessment. A similar approach can be used to integrate disparate components when defining individual health status.

This approach to measurement and reporting:

- Is based on the relative health of a community within a broader population.
- Provides a summary indicator of the health status of a population in terms of risk behaviors, health attributes, and community characteristics in a way that allows domain specific summarization of the behavioral risk of a community.
- Produces a summary indicator of population health.
- Provides a research tool for health services research, especially to help link population characteristics to population measures.
- Can be used to track changes and to evaluate interventions.
- Allows for meaningful aggregation of data, based on clinical constructs

It represents an example of a simple approach to interpreting and reporting data that have substantive coherence but diversity in form or distributions. This approach can be customized to fit the circumstances, allows for simple aggregation of data felt to be substantively related, and can be interpreted easily for both reporting and comparison purposes. It also allows us to develop measurement strategies based on theory and data to populate the model described earlier

USING THE MODEL FOR EVALUATION

The model and measurement strategy above provide a means to evaluate community health improvement programs. The ability to attribute causation will be enhanced if the likely health benefit of interventions that are health care specific can be predicted based on the literature and/or clinical knowledge.

Briefly, the process to measure the impact of a program on community health is as follows:

- Recognize that the overall impact of the program on the health of the community, that impact has four components:
    1. the impact of the health change;
    2. the health-related impact of CI (which includes the impact of the program as well as secular trends);
    3. the interaction between the health program and the community change, and
    4. an error or random variation component. Over repeated measurements, that error term approaches zero.

The interaction component can be quantified as the difference between the observed change and the anticipated change from the health interaction plus the anticipated change from the community interaction, if sufficient literature exists. If the community intervention is not sufficiently based on data or theory to predict the specific health related change, then the model still allows for overall assessment of the total impact of the community program by measuring the difference between the anticipated change from the health intervention and the observed change. This measures the total impact of the intervention on community health, but does not allow attribution to the direct and indirect benefits of the program. For example, a program that increased access to mass transit may improve the health of the community by decreasing pollution, decreasing motor vehicle accidents, decreasing traffic-related stress, etc., all direct effects. If the hospital independently began a new preventive medicine clinic that was expected to see 5,000 patients a year, but saw 7,000 patients because new bus routes enhanced access, then the overall health change in the community is the sum of the direct effects of the new mass transit, the independent effect of the health clinic on 5,000 patients a year and the interactive benefit of the heath clinic and the mass transit on 2,000 patients per year.

One approach to evaluation follows:

1. Use the model to measure the health of the population at baseline, either via the population model described, or by measuring health in a broad fashion on a sufficiently large sample of individuals.
2. Define the intervention and the mechanisms of action. Identify the potential HRCC and the direct and indirect components. Identify unrelated changes in health care delivery, including secular changes and the results of other interventions.
3. From the medical literature or prior data, define the expected health benefits (EHB) of the health care related changes not related to the intervention.
4. Measure the population health following the intervention.
5. Adjust the findings to account for the Expected health benefits of the non-intervention related health care changes.
6. Subtract the baseline results from the adjusted findings. This difference can be expressed as follows:

$$\Delta \text{ PH} = \text{EHB} + \text{DHB} + \text{IHB}, \text{ and}$$
$$\text{HRCC} = \Delta \text{ PH} - \text{EHB}, \text{ where}$$

Δ PH is the change in population or community health, HRCC is the health related community change, EHB is the expected health benefit from the health care component of the intervention, DHB are the direct health benefits of the program, beyond the direct health care component, and IHB are the indirect health benefits.

CONCLUSION

We describe the first model to represent community or population health as the integration of the health of the individuals in the community. It explicitly considers the impact of the community on health as an effect modifier of health and incorporates the measurement of population health outcomes. This model uniquely assesses of the impact of community or social interventions above and beyond the impact of concomitant health care interventions. Finally, it provides an empirical basis for measuring population health to evaluate community health interventions.

This model is still in the early stages of development and we can anticipate changes in the specifics. We will be further developing and testing the model on the MESH data, as well as on national data sets, such as those produced by the National Community Tracking Study, produced by the Center for Studying Health System Change that is supported by the Robert Wood Johnson Foundation. We would appreciate others who attempt to use this model sharing their experiences with us.

Appendix A: Model of Community Health

A1 The Model

This section lays the groundwork for a formalization of our community health model. We begin at the level of individual health status and then aggregate individuals to obtain a measure of community health. Assume $i = 1,\ldots,N$ indexes individuals in the community, and $t = 0,\ldots,T$ indexes years of life for each individual.

Current health status for a given individual, h_{it}, at any point in his life consists of an individual component and an environmental component, which may include both community and behavioral factors. We assume that the individual and environmental components are independent, and we treat the individual component as a function of time and the environmental component as a multiplier of the individual component. Denote the individual component by the function g and the environmental component by the function f and we can formalize the health status path of an individual as

$$h_i(t,c) = g_i(t) f_i(c) . \tag{1}$$

We assume that h_i that is continuous and twice differentiable. We also require that $h_i(0) > 0$ and $h_i(T)=0$. This assures that that no person is born dead, and no dead person can be considered healthy. We further assume that $f_i'(c)$ is non-negative, so that improvements in environmental structure will not harm health.

This equation yields the momentary health status of an individual at time t conditional upon environmental structures, c. One question is whether the most appropriate measure for the health status of an individual is the realization of $h_i(t,c)$ at a given moment or the present discounted value of all future health states. We argue that the latter is more appropriate, and differentiate between current health status, which is equation (1), and health status, which equals current health status plus the sum of expected future health. More formally, health status can be written:

$$H_i = g_i(c) \int_0^T f_i(t) dt . \tag{2}$$

We can also write a discrete time approximation as:

$$H_i = g_i(c) \sum_0^T f_i(t \; d \; . \tag{3}$$

The reason a distinction is made between current health status (h_i) and health status (H_i) is best explained by an example. Consider an individual who, say, quits smoking in the current today. Then current health status, that is his health status today, does not change. But the sum of expected future health

increases. A measure of community health based on individual health should reflect the expected benefits. Therefore, the measure of individual health that is relevant to community health is expected health.

Community health, then, is the average of individual health, which can be written:

$$CH = \frac{1}{N}\sum_{i=1}^{N} g_i(c)\int_0^T f_i(t)dt\,, \tag{4}$$

or, as a discrete time approximation:

$$CH = \frac{1}{N}\sum_{i=1}^{N} g_i(c)\sum_{t=0}^{T} f_i(t)\,. \tag{5}$$

Equation 5 is the measure of community health. Note that the individual and environmental components are functionally independent, and the environmental component enters as an effect modifier.

A2 Comparative Statics

We are interested in characterizing the comparative statics of the community health model. In particular, we would like to determine the response of community health to small changes in the environment and time. First, consider how community health changes with time. For simplicity, we use the discrete time versions of the formulas, but the results generalize to continuous time. Formally,

$$\frac{\partial CH}{\partial t} = \frac{1}{N}\sum_i g(c)\sum_t \frac{\partial f}{\partial t}. \tag{}$$

Because the sum of environmental structure is positive, the sign of this term is determined by the slope of the individual time functions, *f*. Because we have not placed any restrictions on , the impact could be positive or negative.

The impact of community structures on community health is

$$\frac{\partial CH}{\partial c} = \frac{1}{N}\sum_i \frac{\partial g}{\partial c}\sum_t .f(t) \tag{}$$

This term is non-negative because is non-negative for all *t*, and is positive by assumption. This means that improvements in community structures may increase community health or leave community health unchanged, but will not harm community health.

A2 Example

To illustrate our model, consider a hypothetical example, where $f_i(c) = 1$ and $g_i(t) = 1 - t^2$. This results in the health path in Figure A1. The individual's lifetime health is the accumulation of health status achieved during his lifetime, which is found by solving the integral:

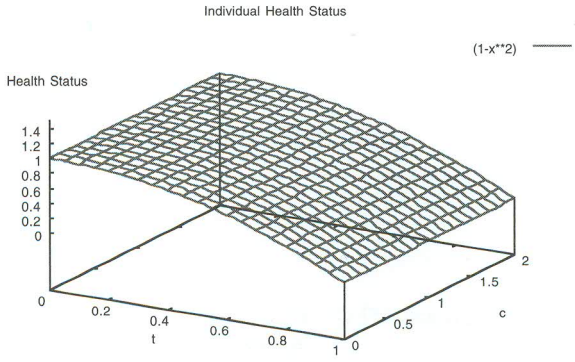

Figure A1: Health status path for $h_{it} = 1\text{-}t^2$. Note that for simplicity, health status has been normalized to a maximum of 1, and time has been normalized between 0 and 1, without loss of generality.

$$CH = \frac{1}{N}\sum_{i=1}^{N} g_i(c)\sum_{t=0}^{T} f_i(t)\,. \tag{5}$$

Community health would then be the average across all individuals in the community, or the average across a random sample from the community.

Life Together: Enhancing Community, Connections and Collaboration A Strategic Plan for Family Practice

WILLIAM L. MILLER, MD, MA, GARY KUKULKA, PHD

Background

In 1994, Lehigh Valley Hospital's Department of Family Practice received a threefold mandate from the hospital board and administration:

- establish a national benchmark family practice residency for the 21st century;
- develop a continuum of primary care which will help improve community health status; and
- serve as a catalyst and model for interdepartmental collaboration.

Given this mandate for collaboration and given the rapid rate of change in healthcare and generally, we chose the "learning organization" model described by Peter Senge as the most complementary framework for our efforts. An early step was the creation of an innovative, non-rotational, competency-based curriculum for family practice residents. The goal was to develop healers who are lifelong learners—who know how to collaborate and to integrate service, education and research in a community-oriented primary care practice.

Our capacity to achieve the hospital's mandate was greatly enhanced by a three-year grant from the Dorothy Rider Pool Health Care Trust. It helped fund the first three phases (Initial Development, Planning, and Building Capacity) of our department's six-year strategic plan. Now in the third year of that grant, we have made notable progress. Our department has:

- begun developing a learning organization culture;
- instituted an empowerment evaluation process that will soon be used by several other departments;
- established a successful, nationally-recognized, innovative family practice residency and graduated the first full class of residents; and
- implemented several small-scale empowerment-based community-oriented primary care (E-COPC) projects.

It is now time to move into the final phase (Sustainable Growth and Projects' Implementation) of the strategic plan. It is time to use our developing capacity as a means to enhance "community, connections and collaboration" and to ensure our sustainability.

We propose to achieve the hospital's mandates by working to close the gap between our current reality and our shared vision. Through the use of empowerment evaluation we will make this gap explicit and identify problems, needs and limits to growth. Then, we can develop strategies for creative engagement. Certain contingencies—such as competitive imperatives and limited resource availability—influence and shape the possibilities within this creative tension. It will be essential to have people who share the skills of self-reflection, team learning, systems thinking and meaningful assessment

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and measurement. They must also have the appropriate professional core competencies and an organizational culture emphasizing creativity. Finally, each strategy we develop must meet the minimal guidelines of having a clearly defined mission; a few critical assessable objectives; action plans with a timeline; clear roles and accountabilities; agreements among the participants for working together; and a clear communication plan.

We have titled the final phase of our strategic plan *Life Together: Enhancing Community, Connections and Collaboration*, and we are grateful to the Pool Trust for their continued funding. The needs we now seek to address emerged in four separate summative empowerment evaluations (1997-1999) and a site visit by the Pool Trust program staf and external reviewers (1998). All of their assessments emphasized the importance of a sharper focus and smaller, more clearly defined steps toward our larger goals. Our ambitions were exceeding our energies, to the point of potential burnout. The Pool Trust urged us to focus on two specific areas:

- measurably operationalizing both the learning organization model and E-COPC in the Lehigh Valley Family Health Center (the residency clinical site), and
- measurably operationalizing connections between our department and the Center for Educational Development and Support (CEDS; see Chapter 6), the hospital's Division of Health Studies, and MESH (Measurable Enhancement of the Status of Health; see Chapter 2).

The empowerment evaluations and our own executive committee identified a number of other specific concerns. We have categorized these into three focal areas, described in the next section. They form the basis for the objectives and strategies that follow.

Areas of Concern

1. Department of Family Practice and Family Practice Residency Program

Our department and residency program were built on the following premises:

- The way we care for our patients reflects the way we are cared for in our learning process.
- 21st century family physicians will need to be highly skilled in lifelong learning methods and developing learning environments.

In other words, if family physicians are to become partners with their patients and establish productive healing relationships, they need to experience the same in a nurturing and supportive learning environment. And residents need to learn tools for conducting lifelong assessment of their competency. As we progress toward this vision, we face a number of concerns:

The learning organization changes we have already implemented are fragile and under threat. While our evaluators recognize that we have made a good beginning—and we ourselves are seeing the advantages of being a learning organization—they also note at least four challenges to our continued success. (These challenges are not uncommon, according to national leaders.)

- *Not enough time* — Learning organizations can become victims of their own success by generating more ideas than they can pursue without jeopardizing core functions. Our problem may also involve a specific lack of time for focus and concentration.
- *No help* – Too often in the past three years, there was a mismatch between our need for coaching, guidance and support relative to learning organization skills and the availability of that support.
- *Fear and anxiety* – Accelerating the pace of change, learning to let go of reassuring habits, and participating in open and challenging conversations that threaten old beliefs and assumptions—these essential activities of a learning organization often generated fear and anxiety.
- *Assessment gap* – What learning organizations do is often ahead of the traditional measurement

curve; the result can be a gap between what is actually happening and what the parent organization is measuring. In our case, for example, most of our activities have focused on productivity of ideas (versus the measured short-term revenue gain), increased collaboration (versus the measured short-term expense reduction), and educating residents to focus on enhancing health status (versus the measured "disease management" parameters).

Our existing competency assessment tools are inadequate. The latest national Action Plan for Residency Education calls for models that focus on competencies rather than time-based requirements—competencies in such areas as community, computers, relationships and organization as well as biomedical and biopsychosocial knowledge. Our program has a longitudinal curriculum integrating educational experiences in five areas of clinical awareness (self, encounter, practice, system and community) needed to support medical education innovation. This curriculum aims to develop lifelong learners who can work with faculty to meet their individual educational needs. We must now develop the infrastructure to support continuous formative feedback and self-reflection opportunities for learners. This will require clear competency statements, information tools and faculty development to support the learning organization culture.

Current faculty development is inadequate. New ways of organizing teaching and learning require new methods and skills in the faculty. Problem-based learning in medical schools has been most effective when faculty development and the evaluation system support the process (D'Eon, 1999). Our faculty need to further their understanding of competency-based education and their learning organization skills. Most important, they need to learn the art of giving gifts (formative evaluation) to learners, and how to maintain an open, safe learning environment while still providing quality healthcare. And faculty development must go beyond the individual level; to sustain our cultural changes, we need a faculty who work in partnership with learners and with each other.

2. Primary Care in the Community

Primary care at Lehigh Valley Hospital is still divided among four departments (Family Practice, Pediatrics, Obstetrics/Gynecology and General Internal Medicine) with little or no coordination or long-term planning. We are making progress, and Family Practice has built an infrastructure and a successful residency program. It is time to direct our energies out into the primary care practice community—where we see a strong potential to improve the quality of care and community health status in four specific areas of need:

We have insufficient knowledge about primary care delivery and quality in the Lehigh Valley. Presently we have almost no way of knowing what is going on at the various primary care sites in our community. Information from managed care companies and other insurers is limited, and pilot programs to measure patient

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

This paper is a wonderful example of how community health program planning principles can be applied to any level of "community", such as, in this case, a hospital system. Much as was described earlier for the entire community health initiative, LVH's Family Practice Department applied processes of needs assessment, development of specific objectives and action plans, identification of measurable outcomes, and a comprehensive evaluation that would permit ongoing assessment and modification of their effort to affect institutional change. It seems that much of the new technology for improving public health practice has been adapted from business and management fields. Concepts like "continuous quality improvement" and "performance monitoring" are imported from other arenas. It is refreshing to see that community development principles such as participation, empowerment, and collaboration are being applied to improve the health of a hospital system. Furthermore, the application of an ecological model for sustainability is another example of how population-thinking can be applied in any context.

health status, satisfaction and quality assurance are in the planning stages. Now that our department has been named a Center for Research by the American Academy of Family Physicians (AAFP), we have the support to begin addressing these informational needs.

There are not enough quality community teaching sites for residents and others. All the primary care residency review committees call for more education in "real" ambulatory settings. Also, the several new programs in the Lehigh Valley for physician's assistants and nurse practitioners need ambulatory training sites. In the face of this high demand, very few practicing primary care physicians have the tools or training to simultaneously accommodate learners and meet their own practice and patient care needs.

Primary care prescribing patterns need improvement. The news from pharmaceutical and insurance companies is clear: there is much room for improvement in the consistency and appropriateness of primary care physician prescribing patterns. Inappropriate drug use, increasing drug costs and adverse reactions continue to spiral out of control. The physicians in our area will soon be held at risk for drug costs by managed care companies, and outside agencies may soon begin auditing their handling of drugs and drug samples. They are not ready for these changes.

Chronic illness care is perceived to be fragmented and inadequate. Chronic illness is one of the Lehigh Valley's, and the nation's, major burdens. With the aging of the population, this burden and its associated costs will only escalate. As noted above, we have little data about how chronic illness care is delivered and received in the Lehigh Valley, but the perception among family physicians is that care is fragmented, inadequate—and increasingly difficult to provide due to time pressures and inadequate support and payment mechanisms.

3. Linkages Between Clinical Service, Education and Research

We do not have adequate ways to transfer research results into primary care practices. The MESH initiative, mentioned earlier, has led to significant achievements in community assessment, grassroots development activities and not-for-profit collaboration. However, few of the lessons from this exciting work have been translated into community-oriented interventions. We have had success with several pilot E-COPC initiatives at the Family Health Center, but we have not transferred these to the other hospital residency/clinic sites or into private practices.

We do not have adequate ways to transfer research results into residency education.

In recent years, national organizations have spent significant time and resources reassessing all levels of medical education. They are beginning to identify the core knowledge, skills and attitudes physicians need to practice successfully in the future. The result is a call for paradigm-shifting reforms focusing on general competencies in the patient care process, interpersonal and communication skills, and practice-based research, learning and improvement. These reforms require a closely collaborating interdepartmental faculty able to teach from the heart, provide gifts of formative evaluation, and demonstrate teamwork in education and patient care. Such concepts fit well with the CEDS strategic plan. This year, for the first time, our department is developing linkages with CEDS, MESH and LOVAR (Lowering of Vascular Atherosclerotic Risk; see Chapter 5). We need to strengthen and enhance these linkages.

Communication within and across clinical, educational and research services is inadequate.

A fundamental problem underlying all the above concerns is the inadequacy of communication. The Pool Trust site reviews of CEDS, MESH and Family Practice noted internal and external communication deficiencies, and our own departmental evaluations also uncovered problems. To succeed in the next three years, we will need a clearly defined communication strategy.

Objectives and Strategies

The objectives and strategies that follow are specifically tailored to address the needs described in the preceding section. Each objective and associated strategy seeks to creatively engage the tension between

current reality and our shared vision for primary care and our community. All the objectives and strategies must resonate with our values and vision and they must be consistent with the following seven attributes of successful community change programs:

- Program is comprehensive, flexible, responsive and persevering.
- Children are seen in the context of family.
- Families are seen as parts of neighborhoods and communities.
- Program has a long-term, preventive orientation with a clear mission and the ability to evolve over time.
- Program is well-managed by competent, committed individuals with clearly identifiable skills.
- Staff are trained and supported to provide high-quality, responsive services.
- Program operates in settings that encourage strong relationships based on mutual trust and respect.

1. Department of Family Practice and Family Practice Residency Program

Objective 1-1 — Strengthen the learning organization infrastructure and processes.

Increase perception of available time for work. We will assure regular, facilitated time for focus and concentration and for associated skill-building at both the group and individual level, through:

- *Focusing Retreats* (three yearly).
- *Work-Out Time* provided regularly so our team can develop time management and work assessment skills. (We use the RAMMP framework, based on the following questions: Is this Report really necessary? Does this decision need to be Approved by so many people? Do we need to have this many Meetings? Do our Measures match our desired behaviors? Do our Policies and procedures encourage or discourage our efforts?)
- *Protected Leadership Time* to assure the success and implementation of all programs.

Reduce perception of needing help. We will continue teaching and reviewing the core skills of the learning organization while also enhancing educational support at the group, team and individual level, through:

- *Learning Organization Workshops* emphasizing systems thinking skills (the skills shown to best enhance the coaching and support function). Other departments will be invited to participate in these.
- *A designated Learning Coach* responsible for the above workshops and available for coaching and support.
- *Team Level Coaching.* The Learning Coach will build coaching skills into each team and level of line management.

Reduce fear and anxiety. We will increase the level of emotional support immediately available at both peer and leadership levels, through:

- *Partnership Program*, in which each faculty and staff person is linked with a peer for assignment sharing and other work-related activities.
- *Sacred Hour Program*, in which faculty and staff meet regularly and confidentially with their line manager to share fear and anxiety issues related to emotional safety, adequacy and trust.

Measurably demonstrate the value of the department and its initiatives as a learning organization. We will achieve this through:

- *Creating a Measurement Team* with the skills, executive mandate and resources to assess and demonstrate the value of our department and its initiatives. This team will use information developed through RAMMP and other processes, integrating their activities into process improvement reporting.
- *Providing Assessment Consults* for the Measurement Team on empowerment evaluation, learning organization and systems measurement skills.

- *Integrating* the empowerment evaluation process with the work of the Measurement Team (see Evaluation section below for more details).

Objective 1-2 – Develop competency assessment tools in five areas of clinical awareness (self, encounter, practice, system and community).

We will develop new tools and methods to measure core competencies for family practice physicians. This sequential process will involve:

- Creating clear *competency statements* for each of the five areas of clinical awareness.
- Developing evaluation tools for *clinical encounter* competencies.
- Implementing the *Precept Assist* system, personal digital assistant software each preceptor will use to document and track clinical encounter competencies.
- Adapting and *expanding Precept Assist* to include practice, community and system awareness.
- Developing integrated systems to document Family Health Center *practice-specific learner experiences* and performance.
- Developing a measurement system for *community and system awareness* competencies.
- Developing *monitoring and evaluation tools* that allow residents to track and compare their experiences and also identify gaps to help with future educational planning.

Objective 1-3 – Create faculty development programs that support competency assessment and help us work in partnership to sustain cultural changes.

Using an empowerment model, we will develop faculty workshops including formative evaluation modules. To support the design and content of these workshops and our long-term faculty development planning, we will use appropriate needs assessment methods. This process will involve:

- Developing our faculty in the use of family practice residency *"clinical encounter" models.*
- Holding faculty development seminars in *formative evaluation* and competency-based education.
- Developing our faculty's understanding of the competencies documented in the *Precept Assist* system (see above).
- *Participating* in the Society for Teachers of Family Medicine Group on Residency Education, which focuses on longitudinal curricula in residency programs.
- Continuing to develop our faculty's understanding of appropriate tools for *integrating daily activities* in a format that allows residents to reflect, review and plan their educational growth.
- *Expanding* our current tools for formative evaluation based on our teaching models for the clinical encounter.

2. Primary Care in the Community

Engaging busy family practices in a process that requires them to become research sites, preceptors and, eventually, innovative learning organizations is an enormous challenge. The key is to first envision this possibility, then develop a realistic plan of incremental change and growth. Our strategy begins by engaging family physicians in issues of great importance to them. A recent needs survey revealed that prescribing and formulary issues were high on the list, followed by chronic illness care and office personnel problems. We will build on these perceived needs, first addressing prescribing concerns and chronic illness care. We will then use a preceptor program to address staffing issues and learn more about the complex structure, culture and processes of the various primary care practices.

Objective 2-1 – Improve primary care prescribing patterns.

We will create an educational intervention designed to develop a self-perpetuating model allowing physicians to make optimal prescribing decisions in partnership with their patients. This intervention will be coupled with activities that address practice-identified needs. The process will involve:

- Developing the *Educational Intervention Program*, with initial focus on database formation, identifying resources and evaluating present practice. (This program will coordinate with the information mastery activities of the research network in Objective 2-4, below.)
- Conducting *Practice-based Drug Management Evaluations*. These will help primary care practices prepare for greater risk under managed care and for JCAHO and managed care site evaluations.
- Developing a *Primary Care Formulary Guide* that consolidates the various managed care formularies and restrictions and makes its easier for physicians to efficiently prescribe appropriate medications.
- Arranging for a clinical pharmacist to *precept students* from Wilkes School of Pharmacy, who will assist in the first three activities described above.

Objective 2-2 – Improve perceptions of chronic illness care by primary care physicians and their patients.

In collaboration with Lehigh Valley Hospital Care Management and with MESH/LOVAR, we will develop several pilot programs that simultaneously improve the care of chronically ill patients and the operations of primary care practices. This process will involve:

- Implementing a *Chronic Disease Self-Management Program* in several primary care practices. This Stanford University program was shown to be effective in a randomized controlled trial.
- Implementing a *Cooperative Clinic Program* in several primary care practices. Elderly patients with chronic illnesses are seen in group settings in this clinically and economically effective approach.
- Designing and implementing *E-COPC projects* based on MESH/LOVAR results.

Objective 2-3 – Increase the number and quality of community teaching sites.

To achieve this objective, we will create a Community Preceptor Development Program based on the Preceptor Education Project (PEP) of the Society for the Teachers of Family Medicine. We will also include training in formative evaluation skills and clinical primary care tools (such as evidence-based medicine, clinical encounter types and systems thinking). The program will help our community partners prepare their practices to become learning cultures and to incorporate students and residents into busy office routines.

Objective 2-4 – Establish ways of assessing patient and practice-oriented outcomes that also help practices become learning organizations.

We will develop primary care research networks serving the needs of our own organization, the local area and our bioregion (Delaware River watershed). This process will involve:

- Developing a *Lehigh Valley Health Network (LVHN) Research Network* whose initial goal will be to develop new patient-centered, practice-oriented outcome measures and pilot their use in the network practices. Each participating practice will be trained in information mastery and becoming a learning organization.
- Developing a *Bioregional Research Network*, to support and extend the work of the LVHN net-

work in collaboration with Jefferson Health Systems in Philadelphia and the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson.

- Planning for a *Primary Care Generalist Researcher Fellowship*, based on the North American Primary Care Research Group's work on building research capacity (Miller, 1994).

3. Linkages Between Clinical Service, Education and Research

Objective 3-1 – Develop a consistent avenue for translating MESH/LOVAR results into clinical interventions.

We are working to create a MESH Clinical Intervention Council (MCIC) to periodically review the emerging results from MESH activities and LOVAR and develop clinical interventions (using the E-COPC approach) based on this work. Initially, MCIC will focus these interventions in our downtown Allentown clinics; as the research network matures, they will move into the larger primary care community.

Objective 3-2 – Increase awareness of MESH/LOVAR activities and results among all residents.

We will develop educational activities for residents to inform them of MESH and LOVAR strategies, activities, results and clinical applications. This process will involve:

- Developing *Primary Care Grand Rounds* including MESH/LOVAR presentations;
- Developing a monthly *MESH/LOVAR Educational Series.*

Objective 3-3 – Improve communications within Family Practice and between the primary care departments, CEDS, and the Department of Community Health and Health Studies.

We will develop a communication strategy using the following learning organization principles:

- Use information for learning, not personal power.
- Include a diversity of voices.
- Share learning among peers.
- Collect and make available logistical data and a means for interpreting data.
- Use technology to manage, disseminate and increase access to knowledge.
- Eliminate structural barriers to face-to-face communication. (Preskill and Torres, 1999).

This process will involve:

- Creating an *Institutional Faculty Development Strategy* focusing on workshops as a path to a shared vision and values. We will base these workshops on four conceptual models: Parker Palmer's work on the courage to teach and the formation of a learning space; Hershey Bell's work on competency-based education and formative evaluation; Peter Senge's work on learning organizations; and Will Miller's work on clinical encounter types and the relationship-centered clinical method.
- Developing a *Web site* that will give learners and teachers instant access to appropriate clinical knowledge and decision support tools, teaching tools, curriculum goals, learning strategies and evaluation tools.
- Enhancing traditional department *communication formats* to include more and better information about such topics as MCIC activities, research network activities and CEDS events. We will expand the Family Practice Newsletter to reach a wider primary care audience.

Evaluation

Empowerment evaluation is a multi-method process we use to assess our department and residency program. Employing depth interviews, focus groups, document review and participant observation by an outside consultant, the process has occurred every 9-10 months since the residency program began. CEDS is now beginning a similar evaluation process for all educational programs at Lehigh Valley Hospital. Annual empowerment evaluations will continue tracking our growth toward our shared vision, and our success (or lack thereof) at becoming a learning organization.

We will assess the accomplishments specific to our objectives using this evaluation process and some additional, more focused assessment tools developed by the Measurement Team. Evaluation systems already in place include yearly surveys of all our faculty development participants to monitor changes, satisfaction and accomplishments. We evaluate each workshop session for effectiveness, and conduct learner and peer evaluations including measurements of how values are being demonstrated by specific, observable behaviors. Individual results are reported to faculty and their supervisors, and aggregate data are reported to individuals and departmental and institutional leadership. We will soon apply these tools to both faculty leaders and community preceptors. Long-term outcome data will be maintained in a community-available format.

Sustainability

We see sustainability within an ecological framework, and conceive of it as having at least three different, but closely related, aspects:

- *Adaptive capacity* — Does the Department of Family Practice, as a complex adaptive system, have the skills, inner resources, learning capacity and necessary services to successfully respond to local, regional, and global primary health care issues?
- *Environmental support* (the ability to meet maintenance and growth needs) — Is our department of sufficient value to LVHN and the region that they will assure adequate long-term support?
- *Sustenance* (the availability of sufficient nourishment) – Do we have realistic plans for obtaining funds to sustain personnel and infrastructure over time?

We believe the answer to all three questions is "yes."

Adaptive capacity

The major focus of our current objectives is to provide the time, resources and skills to continue developing a core faculty and staff. This core group works in partnership with learners and each other to create, grow and sustain the cultural changes consistent with a learning organization. In other words, we are building our adaptive capacity—developing learning skills, generating knowledge about our organization and community, and creating a strong and flexible organizational structure. This will give us the "critical mass" to expand programs, serve more people, and improve our service and outreach.

Environmental support

Sustainability also requires that we demonstrate clear and measurable value to our parent organization. If the hospital is a great lake, then family practice is the many small streams and brooks that fill the lake. As an outpatient, community-oriented, generalist department, we are a low cost, visibly low-revenue, almost invisible cost center. Our goal is to be the small ripples that spread into large effects. We will demonstrate this value by:

- *Defining clearly measurable goals* and tracking their achievement in regular reports to senior management, the Board of Trustees and other key groups.
- *Sharing our innovative leadership* and skills—including clinical improvement, evidence-based

medicine, E-COPC and collaboration—in support of larger LVHN needs and goals. For example, we are presently helping reduce hospital length of stay and implement an evidence-based, restricted therapeutic formulary.

- *Increasing the quantity and quality of the primary care medical staff*, thus directly increasing hospital referrals and admissions.

Sustenance

Plans are already in place for continuing support of our objectives when the Pool Trust grant period ends. We have submitted proposals for several government and private grants. Through our four-year collaboration with family practice researchers at Case Western Reserve University, UMDNJ/Robert Wood Johnson and SUNY/Buffalo, we have been awarded a Center of Research Excellence grant from the AAFP. We are also working to develop community philanthropic support for, among other initiatives, an endowed Chair in Family Practice.

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Community Assessment with the BRFSS Assessing Health Risks in the Lehigh Valley

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Introduction and Background

In the early 1980s, research clearly showed that personal health behaviors played a major role in premature morbidity and mortality. As recognition of this fact was growing, telephone surveys emerged as an acceptable method for determining the prevalence of many health risk behaviors. In addition to their cost advantages, phone surveys were especially desirable at the state and local level, where the expertise and resources for conducting area probability sampling for in-person interviews were not likely to be available. As a result, surveys were developed and conducted to monitor state-level prevalence of the major behavioral risks associated with premature morbidity and mortality.

Chronic diseases are today the nation's leading killers; two of them, cardiovascular disease and cancer, account for almost two-thirds of American deaths. In many cases, the root causes of chronic disease are grounded in modifiable behavioral risk factors. These include uncontrolled hypertension, tobacco use, physical inactivity, poor diet, alcohol and other drug use, violence, risky sexual behaviors and under-use of known preventive strategies such as breast, cervical and colorectal cancer screening.

In an effort to measure and address these issues, the Centers for Disease Control and Prevention (CDC) sponsored the development of the Behavioral Risk Factor Surveillance System (BRFSS). This data collection effort has been conducted since the early 1980s. By 1994, all states, the District of Columbia and three territories were participating in the system. Each state uses a standard questionnaire to collect data through telephone interviews with randomly selected adult residents. The BRFSS is the largest continually conducted telephone health survey in the world, and the primary source of state-based information on adult risk behaviors.

CDC developed the BRFSS in conjunction with the states to gather information from adults on their knowledge, attitudes and practices related in areas such as: health status and access to care, tobacco and alcohol use, dietary patterns (fat intake, consumption of fruits and vegetables), leisure-time physical activities, injury control (including the use of seat belts), women's health issues, use of preventive services (immunization, cancer screenings), and HIV/AIDS.

Although the BRFSS was designed to collect state-level data, several states from the outset stratified their samples to allow them to estimate prevalence by region. Every month, each state selects a random sample of adults for a telephone interview. This process results in a representative sample from which statistical inferences can be

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made. The BRFSS questionnaire has three parts: a standard core set of questions asked by all states, optional modules on selected topics that states may choose to add, and questions developed by individual states on issues of special interest (prostate cancer, bicycle helmet use). Interviewers also gather information on age, sex, racial and ethnic background, education and other demographic factors so that estimates can be made for specific populations and interventions directed to those at greatest risk.

The BRFSS has unique strengths; it is flexible, timely and provides for ongoing data collection; it allows for state-to-state and state-to-nation comparisons; it can address emerging health issues; and it requires fewer resources than in-person interviews.

After CDC editing and data processing, data from each state's monthly interviews are returned to the state. State agencies such as the Pennsylvania Department of Health, Division of Health Statistics produce state-specific reports. A sampling of reports available in Pennsylvania include

- 1998 County Health Profiles
- Behavioral Risk Factors: Pennsylvania and Other States - 1996
- Health Risks of Older Pennsylvanians: Behavioral Risk Factors for Those 65+ Compared to Younger Adults
- Female Cancer Screening by Health District
- Cigar Smoking Among Pennsylvania Adults
- 1998 Data on Health Risk Behaviors of Pennsylvanians

The BRFSS was designed to allow comparisons between states, and between individual states and the nation. Every state uses a similar method for selecting respondents and the same core questions to facilitate comparisons. Since many of the questions are asked each year, nationwide and state trends in health-related behaviors and knowledge can be monitored over time. This capability is important in measuring the effectiveness of health promotion efforts.

States use the BRFSS information to

- determine priority health issues and guide strategic health intervention plans;
- monitor the effectiveness of intervention measures and the achievement of prevention goals;
- support appropriate public health policy;
- create reports, fact sheets, press releases and other publications designed to educate the public, the health community and policy makers about disease prevention.

The BRFSS also allows public health professionals to monitor progress in achieving the nation's health objectives outlined in *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*.

Unlike many survey systems, the BRFSS is flexible enough to satisfy individual state needs and meet information needs at the national level. The benefits of the BRFSS include:

- ***Data can be analyzed by a variety of demographic variables*** including age, education, income and racial and ethnic background. This enables states to determine populations at high risk, to more effectively target scarce prevention resources.
- ***Situation-specific questions can readily be included.*** For example, following the bomb explosion at the Alfred P. Murrah Federal Building in Oklahoma City, the Oklahoma BRFSS included questions on such issues as stress, nightmares and feelings of hopelessness to allow health department personnel to better address the psychological impact of the disaster. In 1993, Missouri added questions to assess the impact of Mississippi River flooding on people's health and the capability of communities to respond to disaster.
- ***Optional modules may be added for a wide range of important health issues***: diabetes, oral health, arthritis, tobacco use, folic acid consumption, use of preventive services, and health care coverage.
- ***The BRFSS core questions allow for state comparisons and national conclusions***. For exam-

ple, state-based data revealed a national epidemic of obesity (Figure 1). And BRFSS data have spotlighted wide disparities between states on key health issues. In 1998, the prevalence of smoking among U.S. adults ranged from 14% in Utah to 31% in Kentucky. The BRFSS also showed that the prevalence of adult smoking in Massachusetts declined after an excise tax increase and anti-smoking campaign were implemented. The unique and flexible qualities of the BRFSS are used by states for many purposes (Figure 2).

MESH and the BRFSS

In 1998, Lehigh Valley Hospital's MESH (Measurable Enhancement of the Status of Health) initiative (see Chapter 1) decided to conduct a "point-in-time" survey to gather comprehensive standard information about the health-related behaviors of adults in the Lehigh Valley. We chose the 1998 Pennsylvania BRFSS survey as our questionnaire, and added the alcohol module.

In Spring of that year, MESH surveyed adults living in Lehigh and Northampton counties. We also over-sampled five areas within these two counties to allow analysis within those areas (Northern Lehigh, Slatebelt, South Easton, South Bethlehem and selected census tracts in Allentown). The Allentown census tracts were 14-98, 17, 18, 19, 20, 21 and 22, an area adjacent to Lehigh Valley Hospital's urban campus. A total of 2,096 adults 18 years or older completed a BRFSS interview. MESH contracted with Macro International Inc. to conduct the interviews and data processing, and we worked with Macro to produce a summary report for the two counties (comparing the Lehigh Valley with national and state BRFSS results) and summary reports for each of the five targeted areas.

Methods (Technical Notes)

MESH selected its BRFSS respondents using a two-stage random digit dialing sample design. In the first selection, a disproportionate stratified random sample of telephone numbers was selected from the universe of all possible telephone numbers in the Lehigh Valley. These are telephone numbers which begin with the area code and exchange prefixes specific to the target areas. Under the disproportionate stratified sample design, the universe of all telephones in the Lehigh Valley was divided into six geographic strata: Northern Lehigh, Slatebelt, South Easton, South Bethlehem, selected census tracts in Allentown and the rest of Lehigh and Northampton counties. We did this to ensure an adequate number of interviews in the first five strata, and 750 in the sixth, for a total planned 2,000 interviews.

The survey questionnaire consisted of the 1998 Pennsylvania state instrument (a standardized core and state-specific questions) and the alcohol use module. An additional question asked whether the respondent would be willing to be re-contacted for a follow-up survey. The CDC developed the core questionnaire with recommen-

Commentary

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Standardized quantitative measures of health status and personal health behaviors have been a hallmark of the public health field. Large scale population surveys of health status, knowledge, behaviors, and other risk factors provide the means by which we can learn about disease and behavior associations, track changes over time, and compare across different subgroups. These standardized data sets are invaluable for the local planning process: one way to establish the need for specific services is to use these data to describe local conditions and compare to national norms or expectations. However, truly local planning initiatives usually find that these data are not reflective of their community. Regional data may be available, but rarely are data available for community such as are found, for example, in urban centers As such, many local community groups find themselves needing to conduct their own primary research to obtain the needed data. While the tools for measurement are available, the research expertise required to use them effectively is not always present in community organizations. The example described in this paper shows how a large hospital system can provided the important research service to its community partners. Clearly this was no small undertaking: the survey described here was large, rigorous and comprehensive. The value of the data, however, is also clear. Information gaps not available in state surveys were filled, and truly local data are now available to a wide range of consumers. Whereas the earlier papers demonstrated that the less traditionally-used methods qualitative, participant research are critical components of the development and management of community health programs, this study demonstrates that standardized quantitative measures are equally important.

dations from all participating jurisdictions. Most of the core questions had been used during the 1996 or 1997 BRFSS; all items new to the 1998 survey were field tested.

Questions of interest to Pennsylvania (concerning prostate cancer screening, firearms, heart disease risk and folic acid) were added as the state supplement to the core questionnaire.

The survey questionnaire was programmed in a computer-assisted telephone interviewing (CATI) system. The questionnaire was tested to assure that question flow and contingency skips were followed as intended. Interviewers received training specific to the 1998 version.

Most interviews were conducted in the evenings and on weekends, to reach people when they were more likely to be at home; a smaller percentage of interviews were conducted during the day. We made at least ten calls at different times of day and night and different days of the week before any number was classified as "no answer". The majority of people who refused to participate were re-contacted by interviewers experienced in converting refusals to completed interviews.

Five percent of all completed interviews were verified by re-contacting the respondent. A probability sample was selected for the verification process. Completed interviews from all interviewers were included.

The outcomes of all telephone calls are shown in the following table. The Upper Bound Response Rate, also known as the cooperation rate, was 71%. The CASRO (Council of American Survey Research Organizations) response rate, which assigns a proportion of numbers of unknown status to the denominator of the calculation, was 52%.

1998 Lehigh Valley BRFSS: Final Sample Dispositions

Code	Final Outcome	Number	Percent
1	Completed Interview	2096	22.7%
2	Refused Interview	840	9.1%
3	Non-working number	2514	27.2%
4	No answer (multiple times)	2499	27.1%
5	Business telephone	1184	12.8%
6	No eligible respondent available at this telephone number	2	0.0%
7	Selected respondent unavailable during interview period	9	0.1%
8	Language barrier	44	0.5%
9	Terminated during interview	12	0.1%
10	Line busy (multiple times)	0	0.0%
11	Respondent had physical or mental impairment	35	0.4%

We adjusted, or weighted, the data to correspond to estimated age and sex distribution of the population for the Lehigh Valley. Because people living in households with more than one telephone or more than one adult had differing probabilities of being selected, we also adjusted the responses to reflect the number of different telephone numbers per household and the number of adults residing in the household. Survey data are weighted, as a general rule, to adjust the responses from the survey sample to more accurately reflect the responses of the general population.

Results

Geographic

As mentioned above, the 1998 BRFSS of Lehigh Valley adults provides data from five different areas of Lehigh and Northampton counties (see Table 2). Of these, South Bethlehem's data exhibit the most dramatic trends.

The BRFSS questionnaire consists of 80 questions plus additional state and MESH modules. The BRFSS report offers data analysis for 41 of these questions taken from among 15 different categories, although only 40 questions were considered for this report. [Note: The question regarding cigarette smoking and being a former smoker was not included in the 41-question total.]

The South Bethlehem results in 13 categories represented the percent closest to the extreme (either the best or worst case scenario) of all five geographic areas. Since many categories have more than one question, it is important to consider the total number of questions as well as categories. South Bethlehem responses were ranked best or worst for 23 (57.5%) of the 40 questions.

Answers can be analyzed from two perspectives, since only the extreme result of each answer is considered: *best of five* (geographic areas) and *worst of five*. For example, of all five areas, South Bethlehem reported the lowest percentage of people who considered themselves to be in *fair or poor health*; this is a *positive* or *best* extreme. However, South Bethlehem also had the largest percentage with *no health insurance*. This is a *negative* or *worst* extreme. Of all questions asked, nine answers (22.5%) reflected the best case scenario, while 16 (40.0%) represented the worst case. No other Lehigh Valley geographic area surveyed presents such distinct data.

More specifically: in the General Health category, South Bethlehem (as mentioned above) had the lowest number of respondents reporting fair or poor health (7.0% vs. the survey high of 16.7%) and the lowest number categorizing themselves, according to BMI standards, as overweight (21.6% vs. 36.4%). South Bethlehem also had the highest percent of physically active people (80.0% vs. 66.4%) and people who participated in regular and vigorous activity (15.0% vs. 5.1%). In the Heart Disease category, South Bethlehem was the group least advised by doctors to eat less fat and cholesterol (20.3% vs. 33.9%) and to exercise more (21.5% vs. 30.3%). Based on these responses, South Bethlehem appears to be healthy.

However, respondents there reported the highest percentage of binge drinking (20.6% vs. 16.6%), chronic drinking (11.6% vs. 3.3%), and drinking and driving (4.9% vs. 1.5%). They also had the highest number of respondents with no health insurance (21.4% vs. 5.0%) and who were prevented for cost reasons from visiting a doctor in the past year (15.8% vs. 5.7%); and the lowest number likely to be eating less fat and cholesterol (59.0% vs. 66.8%). South Bethlehem had the fewest respondents taking multivitamins or folic acid supplements in general (44.5% vs. 54.1%) or on a daily basis (40.7% vs. 50.1%). And it had the highest number of respondents who considered themselves at high or medium risk of getting AIDS (11.5% vs. 3.6%).

In the area of injury control, South Bethlehem respondents were least likely to have a firearm in or around their home (18.4% vs. 46.6%). But they were also least likely to wear a seat belt (62.1% vs. 75.4%) or to have tested their home smoke detectors in the past six months (60.1% vs. 69.6%).

In other geographic findings, the Slatebelt area had the poorest response rate in the categories closely linked with cardiovascular disease. The level of physical activity of Slatebelt respondents (66.4%), those reporting regular and sustained activity (14.5%) and those participating in regular and vigorous activity (5.1%) ranked lowest of all the five geographic areas.

Slatebelt respondents also are the most overweight (36.4 %) and the most likely to be current smokers (31.1%). On the plus side, they came in first for eating five or more servings of fruits and vegetables daily (29.3%). Questions specifically related to heart disease revealed no notable results for this group.

Age-related

In the composite BRFSS analysis, we divided respondents into four age groups. Within these, respondents aged 18 to 29 showed the most conclusive trends. (See Table 1.) They were the most physically active: 86.8% reported some level of physical activity, 29.5% reported regular and sustained exercise at least three times a week, and 13.4% reported regular and vigorous activity. When asked about diet and nutrition, only 21.4% of young respondents reported being overweight compared to 33.3% to 35.6% in other age groups. Few of these respondents reported being advised by their doctor to eat less fat/cholesterol (10.9%) or to exercise more (15.9%). Nonetheless, they reported that they are exercising more than any other group (58.5% vs. 47.9%).

Despite these positive results, young respondents ranked worst in several categories. They are most likely to be current smokers (36.4%), least likely to eat five or more fruits and vegetables daily (14.8%), and least likely to eat less fat/cholesterol (46.6%). So although they follow good health practices in some areas, they are deficient in others. How damaging will this be in the future?

Gender-specific

Several categories pertained to specific gender-related health concerns such as prostate screening, mammography, clinical breast exams (CBE) and pap screening. Although South Bethlehem men represented the highest population to ever have had a digital rectal exam (DRE) (86.0% vs. 67.3%) or a DRE in the past year (66.3% vs. 38.1%), South Bethlehem women aged 40 and over were least likely to have had a mammogram (31.9% vs. 61.4%) or a pap test (89.8% vs. 95.6%). They were also least likely to have had a mammogram in the past year (46.5% vs. 59.9%) or a CBE in the past year (48.0% vs. 69.3%).

A total of 61.7% of all Lehigh Valley women aged 18 and older reported ever having had a mammogram. With the exception of South Bethlehem (at 31.9%), all surveyed areas had a positive response rate on this question between 56.3% and 61.4%. A total of 59.3% of all women 40 years and older reported having had a mammogram in the past year. Again, South Bethlehem had the lowest response rate (46.5 %), although on this question the difference was not significant. The other four areas ranged from 51.6 to 59.9.%.

The most recognizable trend in gender-specific health measures is seen in the age variable. For both mammography questions, the responses were most positive for women aged 50 to 59 (93.4% and 78.1%, respectively). The overall range of results in this category was considerably higher for "ever having had a mammogram" (81.1% to 93.4%) than for "having had one in the past year" (45.6% to 78.1%). [Note: Respondents aged 18 to 39 were excluded from this comparison to keep data consistent.] It is interesting to note that the survey showed similar results for clinical breast exam (CBE) responses. More women reported ever having had a CBE (84.7%) than having had one in the past year (62.3%). The ranges were also similar (70.4% to 91.2% and 40.9% to 78.2%, respectively).

In the education and income variables, there are no such trends regarding mammography. Results vary and lack consistency between questions. In questions regarding CBE, however, there are noticeable trends in all three demographic variables (age, education, and income). For both questions—'ever had a CBE' and 'CBE in the past year'—the results worsen as age increases. Women aged 40 to 49 represent the highest response rate for each question (91.2% and 78.2%, respectively). Responses then go down as age goes up (from 90.0% to 70.4% and from 77.5% to 40.9%).

Education and income variables follow a reverse trend, in that both response levels improve with level of education and income. For example, the response rate of women who had ever had a CBE was 64.8% for those with less than a high school diploma and 93.5% for those with a college degree. These are the extremes of the demographic, but the trend holds throughout, with both education and income.

In another question, respondents were asked if they have had *both* a mammogram and CBE in the past two years. A total of 60.1% of women aged 50 and older answered yes. Results indicate the same trends as for the CBE questions.

Engaging New Partners/Stakeholders

Following review and analysis of the BRFSS survey, we have found both benefits and challenges in applying the results. Although the instrument addresses a wide range of health behaviors, it does not examine any area in depth. It does, however, establish a baseline of health behavior information about our community to serve as a resource for programs, agencies and others seeking to improve the health of Lehigh Valley residents.

Partner programs affiliated with the Department of Community Health and Health Studies have used the BRFSS reports in their successful grant applications (ALERT, Coalition for a Smoke Free Valley and LOVAR). The reports provided relevant local data where none were previously available. The Dorothy Rider Pool Health Care Trust, which funds MESH Community Initiatives, has recommended use of the BRFSS report in applications for funding submitted to the Trust.

MESH is sharing the data and information directly with the residents of the communities surveyed (to date, we have made presentations to Northern Lehigh and South Easton), and working with residents who want help in formulating an approach to health improvement activities. Work planning groups have formed from these sessions and are now developing possible strategies in areas of interest determined by the residents.

An encouraging sign of the value of the BRFSS is the wide variety of individuals, organizations, agencies and institutions that have requested copies of some or all six of the reports. These include local students, regional media, health departments and many residents of the surveyed communities. As we engage both established professional and lay partners and new ones, we see a promising horizon for potential community health improvement.

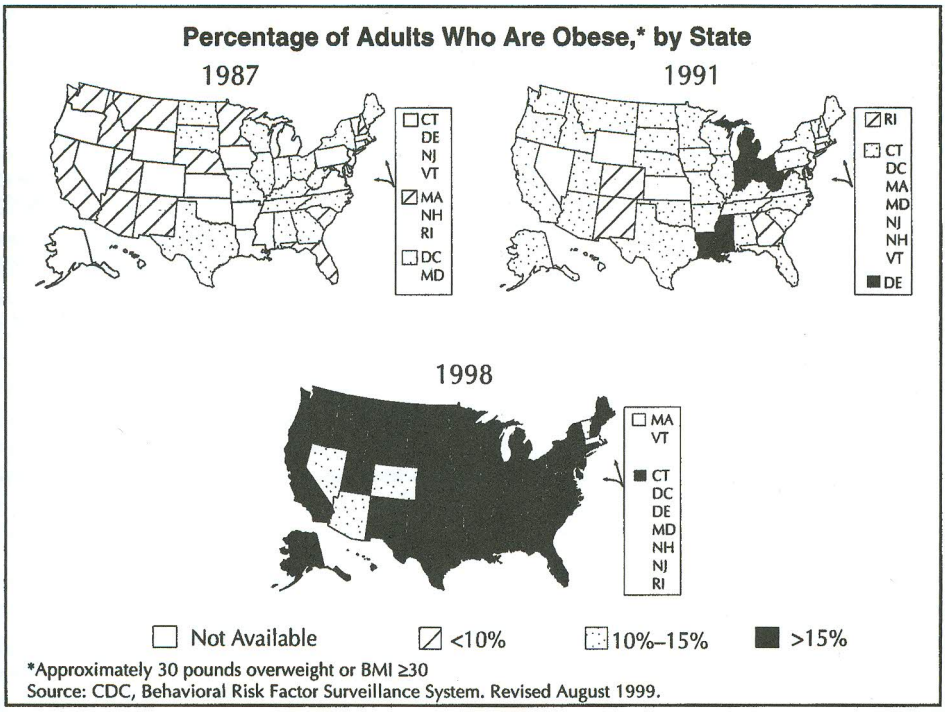

Figure 1

Figure 2. How BRFSS Data Have Been Used

In **Arkansas**, BRFSS data assessing the correlation between physical activity and hypertension among black women have been used by the Governor's Council for Physical Fitness to target special intervention and education programs.

California has used BRFSS data to demonstrate the effectiveness of the state's adult influenza immunization program.

Connecticut has used BRFSS data to support the state's lawsuit against tobacco companies to recover tobacco-related Medicaid costs and to monitor the effects of recent bicycle helmet legislation.

Georgia, in collaboration with the Georgia Chapter of the Arthritis Foundation, has used information from the BRFSS to assess the prevalence of arthritis and related disability in Georgia.

New York uses BRFSS data on the prevalence of regular consumption of whole milk to guide the state's Low Fat Milk campaign.

North Carolina has used BRFSS data to determine the diabetes-care-related knowledge and practices of adults with diabetes to better target education efforts.

TABLE 1. Comparison of Data by Age

	Physical Activity			Diet and Nutrition		Heart Disease			Cigarette Smoking
	Regular/ Sustained	Regular/ Vigorous	Physically Active	Overweight	5+ Fruits/ Vegetables Daily	Advised to Eat Less Fat	Eating Less Fat	Advised to Exercise More	Exercising More	Current Smoker
18 to 29	29.5	13.4	86.8	21.4	14.8	10.9	46.6	15.9	58.5	36.4
30 to 44	22.6	11.1	82.4	33.3	18.7	26.9	67.2	32.5	58.0	28.9
45 to 64	14.5	7.6	71.6	35.6	27.4	37.9	78.6	45.3	58.4	17.8
65 plus	7.9	3.8	61.6	33.6	33.3	43.7	66.0	35.7	47.9	3.0

TABLE 2. Comparison of Data by Geographic Area

	Physical Activity			Diet and Nutrition		Heart Disease			Cigarette Smoking
	Regular/ Sustained	Regular/ Vigorous	Physically Active	Overweight	5+ Fruits/ Vegetables Daily	Advised to Eat Less Fat	Eating Less Fat	Advised to Exercise More	Exercising More	Current Smoker
18 to 29	29.5	13.4	86.8	21.4	14.8	10.9	46.6	15.9	58.5	36.4
Northern Lehigh	16.7	7.2	72.1	33.1	19.3	33.9	65.8	26.6	50.0	24.4
Slatebelt	14.5	5.1	66.4	36.4	29.3	23.8	60.4	28.7	47.7	31.1
South Easton	24.9	11.5	75.5	26.6	18.4	23.1	63.2	26.7	53.4	21.2
South Bethlehem	23.4	15.0	80.0	21.6	27.7	20.3	59.0	21.5	53.8	27.2
Allentown Census Tracts	15.7	8.1	77.5	31.3	21.1	25.6	66.8	30.3	62.9	18.0

Community Water Fluoridation through Public Health Policy: One Community's Journey

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Background

Public health practices include activities that promote health; prevent disease, injury and premature death; and create community conditions under which people can live safe and healthy lives. Public health systems are seamlessly incorporated into daily life, whether we are aware of them or not. "We get up in the morning, turn on the faucet, and know that our water is safe. That is public health—that is the result of public health. And, if we are fortunate, that water is also fluoridated—that, too, is public health" (Levy, 1998). But at some point, someone must assume responsibility for assuring those benefits (i.e., water fluoridation). This public process is the implementation of public health policy.

Public health policy is a major factor in the many great public health accomplishments of the past century, including the decline in deaths from coronary heart disease and stroke, improvements in motor vehicle safety, and fluoridation of drinking water (Lee, 1999). According to Dr. Trevor Hancock, primary health care strategy promotes three main components: a multi-sectoral approach, community involvement and appropriate technology. The first two are the basis of healthy public policy and the current public health movement. Dr. Hancock affirms that policies benefiting the long-term future of a large population (e.g, community water fluoridation) are beneficial to the individual as well (1985).

Water fluoridation is a comprehensive example of a public health intervention and its implementation through public health policy. In 1999, fluoridation was cited by the Centers for Disease Control and Prevention (CDC) as one of the *Ten Great Public Health Achievements – United States, 1900-1999* (Morbidity and Mortality Weekly Report, 1999). Fluoridation provides a service not only by offering improved general public health but also by addressing a social problem with medical implications (e.g., low-income families who can't afford dental treatment). As stated by Dr. Barbara DeBuono, "The future work of public health...includes cooperative relationships between health and education departments regarding school health programs [and between] health and human service departments regarding health service delivery to low-income persons..." Allentown will fulfill the criteria cited for a primary public health improvement when it achieves fluoridated water status. The remainder of this paper offers a closer look at the struggle of one community's journey to improve public health.

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Of the three major municipalities of the Lehigh Valley, two (Bethlehem and Easton) have optimally fluoridated water supplies. Over the last 45 years, the largest of the three communities, Allentown, has repeatedly rejected fluoridation of its water supply despite the fact that Allentown's population of approximately 105,000 "boasts" a 50 percent higher rate of active dental decay in school children than does fluoridated Bethlehem (PA Department of Health, 1999). In December 1996 the Dorothy Rider Pool Health Care Trust convened an informal group of community leaders to explore the potential for a successful water fluoridation movement in Allentown. At the time, the most recent attempt at policy change was in 1993. In July of 1997, coordination of the effort transferred to MESH (Measurable Enhancement of the Status of Health; see Chapter 1), a relatively young community health improvement initiative of Lehigh Valley Hospital funded by the Trust.

Consequently, a new coalition formed—Citizens for Children's Dental Health (CCDH)—and a Plan of Action quickly followed. With the primary intent of improving the dental health of children and families through implementation of community-based preventive practices, CCDH proposed a three-part strategy: 1) promotion of water fluoridation, 2) promotion of better dental health education and 3) improvement in access to dental care. The group targeted fluoridation of the Allentown water supply as its major goal, and focused throughout the campaign on achieving a City Council vote in favor of fluoridation. (Early advice suggested a public referendum was not appropriate in Pennsylvania.)

Methods

CCDH decided to identify and implement a variety of approaches, taking into consideration both known and emerging campaign challenges. Focus areas included: 1) education about the benefits of fluoridation, 2) organized promotion and support for fluoridation, 3) unanticipated opposition from a local manufacturer, 4) anti-fluoride arguments and 5) finance of implementation costs. The group conducted a series of activities to support each of the campaign target areas.

Members began by researching the focus areas and then disseminating pertinent educational information among colleagues, the public and City Council members. City Council strongly influenced CCDH tactics; implementation strategy included special attention to the expressed concerns of Allentown's mayor and council members. Initially, the most pressing item was #3 above. The influential manufacturer's objection to fluoridation (discussed in more detail below) had threatening implications for the campaign.

Education

The education component incorporated two main strategies:

- ***Media Kit Development*** (a collection of reference materials including articles and fact sheets on the status of community water fluoridation; articles on the history, effectiveness, benefits, costs and safety of fluoridation; research on fluorosis; letters of support and lists of local, state, national and international endorsers; and rebuttals to misinformation)
- ***Speakers*** trained to address the issue of fluoridation who were available to various community agencies and organizations

CCDH developed public awareness and support by distributing media kits and other materials to City Council members, local media representatives and community event attendees. Members of the group also conducted meetings with individual Council members both to inform them on the benefits of water fluoridation and to solicit their support. Finally, CCDH created a fluoridation campaign packet for dental, pediatric and family practice offices and not-for-profit agencies. The packet offered an array of promotional and educational materials including signs and posters to display in offices and buttons to wear and/or distribute to patients and clients. Materials were printed in both English and Spanish to inform the largest audience. The packet also included petitions and sets of stamped and addressed postcards to be mailed to City Council members stating the sender's support of water fluoridation.

Building support

To build support, CCDH organized a petition-signing campaign and created a database for tracking contacts and received responses. During the early phases of the campaign, the group identified individuals willing to show support at City Council meetings or to send letters of support to newspapers or City Council members. Phone surveys helped track the extent of participation.

Another early step was to identify those who had contributed to the campaigns of individual Council members, then identify CCDH members who were acquainted with these contributors and who could enlist their collaboration. The contributors were asked to support fluoridation and to personally communicate their support to the appropriate Council members. CCDH believed it was very important for campaign contributors to let Council members know of their position on the issue.

CCDH held two rallies at which they offered descriptions of what to expect at the City Council meeting. They emphasized courtesy and respectfulness, and offered speakers' tips to those willing to make supportive comments in Council Chambers. Priority position was accorded to Allentown residents and voters and to local health professionals, especially those with unique perspectives (e.g., pediatrician, oral surgeon, kidney transplant surgeon).

CCDH also maintained communication with regional newspapers, local radio stations and various other media (e.g., local television news). Newspaper coverage was balanced and largely positive. A local radio personality became a champion for the opposition and presented several forums to forward that position. Television coverage was more balanced and limited to events (Council meeting, press conferences, etc.).

Unexpected opposition

As the campaign flourished, fluoridation advocates focused on battling anticipated anti-fluoride arguments and discussing installation costs. Then, an unexpected objection surfaced. A local microchip manufacturing company voiced concerns about fluoridation and its potential effect on production costs. Because this company is one of the largest employers in the Lehigh Valley and *the* largest purchaser of Allentown water, their sustained opposition was considered a "deal breaker." CCDH immediately set out to address the manufacturer's position through a systematic approach including extensive research into the microchip manufacturing industry and areas of financial concern; and multiple meetings between leadership of CCDH, the manufacturer and Lehigh Valley Hospital.

The parties reached an agreement of understanding. As a gesture of good corporate citizenship, the company would be neither for nor against fluoridation and would abide by the decision of the City Council; and if questions arose at Council meetings or other pub-

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

The next three papers are case studies of programs addressing specific health issues. Each tells a story that shows strengths and weaknesses, barriers and facilitators to their progress. As a group, they underscore the role of idiosyncratic aspects of community health – that history, local context, and the particular cast of characters will play significant roles in how community initiatives move forward and what their effect is. Each separately highlights important factors. The fluoridation example (Faust et al) shows how availability of the best evidence for practice may have little impact on what decisions for action get made. Here, all it took was one strong voice of opposition (that appears to have been politically complicated) to shake up the process. How it got resolved here is an excellent example of statesmanship.

lic venues, they would be referred to the manufacturer. CCDH maintained an ongoing awareness of the manufacturer's concerns and influences.

Anti-fluoride arguments

During the campaign, CCDH members prepared themselves and fellow fluoride proponents to handle anti-fluoride arguments via a series of media training events, literature documentation and ongoing educational opportunities. Key individuals were identified as the assigned respondents for each known anti-fluoride argument. These volunteers were responsible to address "their" argument should it arise. For example, the Chief of Transplant Services responded to questions on the safety of kidney dialysis following fluoridation. He explained, in great detail, the purification process and the safety mechanisms in place to prevent adverse events. Many other medical, dental and lay individuals had assignments in their areas of expertise in anticipation of questions at City Council meetings. In addition, the Allentown Health Bureau issued a memorandum citing 14 examples of public health interventions to ensure the safety of the food and water supply.

Financing of implementation costs

The last stage of the campaign focused on the financial impact of fluoridation implementation. In this stage:

- a review was conducted (both locally and by the CDC's National Fluoridation Engineer) of a design firm's cost estimate to install a fluoridation system in Allentown;
- CCDH researched comparative data on implementation costs at various U.S. sites;
- applications were submitted to source(s) of grant funding;
- cost estimates continued to be explored.

Results

Although setbacks delayed certain elements of the campaign, the outcome was primarily favorable. Most obviously, the Allentown City Council passed the fluoridation bill in January 1999 with a vote of 5-2.

The campaign launch was delayed five months because the microchip manufacturer –in addition to its initial concerns—was negotiating with the City for the possible purchase (for administrative offices) of a closed downtown department store pivotal to economic development efforts. Ultimately it selected another location, but the potential stability associated with anchoring this keystone site was of vital importance to the City, and CCDH was responsive to the situation. As noted above, the manufacturer ultimately committed itself to a neutral position regarding fluoridation.

Significant interim outcomes of the work of CCDH include two awards:

- Community Initiative Award from the Association of State and Territorial Directors and the CDC to the City of Allentown for acting to improve the public health through fluoridation
- Humanitarian Award to CCDH from the Valley Forge Dental Society of Eastern Pennsylvania

In addition, a grant application submitted to the Dorothy Rider Pool Health Care Trust received approval, leading to an award of $500,000 to cover implementation expenses.

Although CCDH has surmounted the primary obstacles, the persistent opposition group continues to attempt to reverse the fluoridation decision. In one form or another, the issue has come before the Council many times, and each time the decision to implement was narrowly sustained. To date, supporters have persevered in deflecting multiple challenges and obstacles. Ongoing application of research and support methods helps fortify the CCDH's fluoridation position and the City Council's decision. Progress continues on implementation; successful bidders have been awarded contracts, construction has begun and completion of the project is expected in early Fall 2000.

Conclusion

Presently, 22 percent of screened Allentown schoolchildren are referred for dental treatment. Within six years of water fluoridation, CCDH expects an approximate 20 percent reduction in the incidence of dental caries in Allentown schoolchildren. And as fluoride is established in the water supply, the most dramatic difference is expected in comparing those children entering school now and those entering six years post-fluoridation. This latter group will have received the benefit of fluoridation from birth. Overall improvement in the community's dental health is a realistic expectation.

Because community water fluoridation is not a selective service, any person with access to a public water system will receive its benefits as an added form of dental health improvement, regardless of financial status. The cost per person to maintain fluoridated water in Allentown is estimated at 38 to 50 cents per year, compared with a current national average cost of $40 for a single dental restoration. With this improvement in preventive oral health, CCDH expects that the need for dental treatment and restoration will decrease. Through its efforts, CCDH (with the support of the City Council) has achieved for its community the medical and financial benefits of fluoridation.

In the spirit of "lessons learned," several important elements were identified as key to CCDH's success. We advise others taking on a similar campaign to:

- engage multiple sectors of the community;
- maintain an ongoing presence and serve as support for Council members;
- monitor opposition tactics;
- expect the unexpected.

Upon implementation in Fall 2000, CCDH will be one step closer to achieving their goal of improving community health through public policy—the "brass ring" in public health!

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ALERT Partnership Community Organizing for Action on Issues Related to Alcohol and Other Drug Abuse

DIANA HECKMAN, BS

Background

ALERT—Partnership for a Drug-Free Valley is a community coalition whose mission is to prevent problems related to alcohol and other drug abuse in the Lehigh Valley. ALERT originated in 1987 as a funding coalition comprising corporate funders, the United Way, the Dorothy Rider Pool Health Care Trust and Lehigh Valley Hospital (the administering agency for the funding). The coalition's purpose was to increase collaboration among prevention agencies to address gaps in service, and our leadership ensured allocation of funding to support specific program objectives. The hospital employed a coordinator to support ALERT.

In 1991, the U.S. Department of Health and Human Service's Center for Substance Abuse Prevention (CSAP) promoted the use of "The Future By Design," a planning framework to develop a comprehensive community vision for substance abuse prevention. Using this framework, ALERT convened a series of strategic planning sessions involving more than 75 Lehigh Valley leaders from the corporate, education and human service sectors, to further identify areas of need and prevention strategies. These sessions were the basis of a proposal submitted by the hospital on ALERT's behalf to CSAP for a Community Partnership Demonstration Grant.

With the acquisition of this five-year grant, ALERT began to develop a broad-based coalition emphasizing the inclusion of all segments of the community. We focused on planning initiatives that addressed school, business and community issues through volunteer action groups representing these sectors. Issues of importance for the school participants (17 public school districts and the Diocese) included student assistance teams, legislative issues and successful student-focused prevention programs. We showcased all of these during ALERT-sponsored regional networking opportunities. For the business community, ALERT provided a forum to obtain technical assistance on substance abuse policy, employee assistance programs and employee prevention services.

Our success in engaging the business community during the initial years of the grant led to the acquisition of a supplemental CSAP award providing resources to focus on prevention in the workplace. Similarly, our collaboration with another hospital-based effort, the Coalition for a Smoke-Free Valley, resulted in a CSAP grant for youth smoking prevention.

ALERT Partnership shifts focus to the "community"

The evolution of the ALERT Partnership from a regional, mainly professional coalition into a community-focused and issue-driven effort began with the work of a committee we convened, the Community Action Group.

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The Lehigh Valley comprises 63 municipalities, each of which is a "community" within which numerous other "communities" exist. It quickly became apparent in Community Action Group meetings that we needed to define the context for our community work, and to focus on issues at the neighborhood level (since no other effort in the Lehigh Valley was doing so). Also at this time, ALERT's government funder was pushing community partnerships to address the prevention continuum and issues related to substance abuse, primarily violence, in their work plans. This meant we needed to develop a mechanism for incorporating the diverse perspectives of law enforcement, juvenile justice, faith communities, educators, residents and prevention agencies as part of the partnership.

The selection of target communities became the Community Action Group's first task. The committee reviewed data compiled through an assessment commissioned by ALERT that catalogued, by municipality, rates of drug-related crime. The committee then selected the cities of Bethlehem and Easton—each of which lacked grassroots groups as community assets—to begin community-specific work.

The method of work, as well, needed to be defined to allow for effective community outreach and planning. The Community Action Group developed a Request for Proposals seeking community organizing consultants. We asked applicants to articulate work plans reflecting knowledge of community development and substance abuse prevention theory, a plan to apply the theory, and familiarity with each of the communities selected. After interviewing candidates, the committee selected two contractor-consultants to work in the target communities.

ALERT's leaders and the consultants met with each community's mayor and police chief, to introduce the consultants and begin building relationships that would prove critical in maintaining a presence in the community. In both communities, we have continued to cultivate these relationships (even through changes in elected officials and department heads) since 1992.

After a year of work, the communities partnering with ALERT took part in an evaluation developed by Kenneth McLeroy, Ph.D., ALERT's principal evaluator for the partnership demonstration grant. Dr. McLeroy conducted interviews with key informants who had worked with the organizers, to assess community perceptions of our work and to solicit feedback on how to improve it. The evaluation assessed the extent to which the community organizing effort had progressed through four stages:

- gaining entry into the community and acceptance by community members;
- conducting an adequate community assessment, including identifying community resources and leadership;
- developing structures for community participation and securing the commitment of community leaders (formal and informal);
- developing or identifying action strategies.

Feedback from the communities yielded information which we used to structure how ALERT would proceed. Because the community responded positively to the quality and scope of work performed by one of the consultants, he was hired to strategize how ALERT would expand its community organizing effort. Under his direction, the consultant team grew in 1994 to include organizers with expertise in neighborhood group development, community policing, cultural diversity and working with high-risk youth in an inner-city school setting. Since then we have altered the team as necessitated by funding levels and changes in community priorities, emphasizing diversity of educational level, life experience, ethnicity, age and gender.

A program strategy supporting community organizing: "Prevention Inventions"

"Prevention Inventions," a grant-awarding program, was developed as a complementary strategy to help organizers gain entry and acceptance in the community and to fuel community-based projects addressing community-specific substance abuse issues.

Thanks to ALERT's organizing experience, we were able to translate how substance abuse impacted various communities and how risk-reduction research[1] could be applied to our work. As a result, we gradually expanded our definition of prevention strategies to include neighborhood-strengthening efforts. This was a paradigm shift for ALERT's leadership, some of whom were members of the original funding coalition that concentrated on prevention education in school settings.

Since 1995, the first year that "Prevention Inventions" shifted and expanded ALERT's scope, we have awarded over $195,000 in grants (ranging in size from $250 to $2,000) to 196 initiatives throughout the Lehigh Valley. Through our organizers in the field, we identified potential collaborators and cultivated creative program strategies with the potential to sustain themselves without ALERT funding. Participation by grassroots groups, as lead applicants in the process, has grown from 18% to over 50%.

"Prevention Inventions" has had an added, unforeseen outcome: Through the creativity generated by collaborating with grassroots groups and the supportive expertise provided by ALERT organizers, human service agencies have broadened the scope of their services. An example of this phenomenon occurred in Easton.

One of the major outcomes of ALERT's organizing effort in Easton is the growth of block watch groups, from four in 1992 to more than 200 in 1999. With technical assistance from ALERT, a city-wide Block Watch Council was formed, offering citizens a forum in which to plan action on issues relating to substance abuse in their community. In response to a neighborhood shooting, block watch leaders (with help from ALERT's organizer) approached the police department, Red Cross and Crime Victims Council for help in forming a neighborhood crisis response team. Seed funding came from a "Prevention Inventions" grant. Through experiences like this, mainstream not-for-profits developed new relationships with grassroots organizations, opening the door for future collaboration.

Very often, a "Prevention Inventions" grant serves as seed money stimulating a one-time activity to grow (with the ALERT organizer's assistance) into something much more comprehensive. For example, ALERT awarded funds to a community police department to purchase bicycle helmets for children's bike safety classes. The police department became interested in the concept of police bicycle patrols. ALERT later assisted in convening a community funding forum of local businesses and resident groups, which eventually raised money for the police to institute bike patrols. Finally, we organized training opportunities to certify the police in the use of police mountain bikes.

Another unforeseen outcome has been the local United Way's use of ALERT's Request for Proposals and grassroots connections to distribute small, neighborhood-focused United Way grants. ALERT is the catalyst for these new relationships between the community and the United Way.

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

The ALERT program (Heckman) also chronicles the trials and tribulations of a coalition building initiative, showing how much effort is really involved. Their recognition that success is dependent on key individuals is profound. On the one hand, this is not an unexpected finding – many of us have come to the same realization. However, this finding is not a "scientific" finding: it is intuitive, not easily quantifiable, and not usually an evaluation finding that is of much help to program replicators or policy makers: finding those exact types of people for each program could be a challenge! Perhaps it is time that more attention be paid to the people who do the work. What can we learn from them that is replicable? What can we do to support the front line practitioners to help them be those key individuals?

ALERT's approach to community organizing: 'Leading from behind'—or, issue-focused organizing with the emphasis on action

ALERT uses no single theoretical approach to community organizing as a work strategy—although the process of developing "social capital," as articulated by political scientist Robert Putnam, most closely reflects our philosophical framework. By developing new social and professional cooperative networks, we strive to institutionalize relationships that address substance abuse and related social issues. Our organizing efforts move beyond providing a program or service. We seek to mobilize citizens to remedy pressing problems by improving the community's *civic infrastructure*, defined by the National Civic League as "the sum of skills, processes and relationships that allow communities to come together and solve problems."

In developing ALERT's organizing teams, we have sought out a combination of political savvy, pertinent life and work experience and a spirit of activism. ALERT staff have coined the phrase "leading from behind," which can be summed up as follows: When the community's energy and talent is supported by the community organizer's expertise in the relevant issues, community members take action, applying proven solutions to address issues related to substance abuse. The following are examples of how ALERT, through community organizing, has collaborated with partners at all levels in the community to plan and implement lasting solutions.

Youth gang prevention

In response to law enforcement professionals' anxiety over signs that youth gangs were developing, ALERT convened a series of workshops featuring experts in youth gang prevention. Participants included police, youth-serving professionals, educators and resident leaders of grassroots groups. We also facilitated ongoing relationships between the community and law enforcement to assist in removing graffiti. As a result of the workshops, a law enforcement gang prevention network began to meet, and the three cities in the Lehigh Valley began to effectively share information on this issue.

School-based violence prevention

ALERT has partnered with many school districts in the Lehigh Valley to develop comprehensive violence and substance abuse prevention policies. In Allentown, we took part in a violence prevention task force of administrators, teachers, police and parents. In response to stated security needs, we researched and compiled information on School Resource Officer (SRO) programs from across the country, and provided this information to the task force. Taking it one step further, we sponsored a three-day site visit of a nationally recognized SRO program and organized teams from neighboring schools to participate in a series of workshops on the concept. Ultimately, all the urban schools in the Lehigh Valley and the majority of the other school districts developed SRO programs. In collaboration with the Allentown Police Department, ALERT sponsored a U.S. Department of Justice training for the first crop of SROs.

Community Policing

Even since ALERT community organizing began, we have tirelessly advocated for community policing in all Lehigh Valley communities. In a series of valley-wide conferences begun in 1995 and involving hundreds of local leaders and police, we showcased successful national and local community policing efforts. Easton, the only city in the region with no aspects of a community policing initiative, ultimately moved forward with the concept in 1999. The city did so after a series of public forums (hosted by the Block Watch Council and the Coalition for Better Neighborhoods in partnership with ALERT) made it clear that Easton citizens were highly knowledgeable about, and committed to, community policing.

Neighborhood improvement through partnership with local government: The Strategic Neighborhood Action Plan (SNAP)

Healthy civic infrastructures require active participation by government. ALERT took part in planning sessions in Bethlehem, convened by the city administration, to explore the concept of a community enhancement process built on an equal citizen/government partnership. The result was SNAP, the goal of which is to improve delivery of basic city services by stimulating a working relationship between neighborhood residents and the city. ALERT is seen by the city as the coordinator of the SNAP effort, helping city departments plan and implement neighborhood improvement efforts and stimulate neighborhood-based associations to improve quality of life. Through a Summer Performing Arts Series, ALERT provided a creative opportunity for residents to come together to celebrate small parks as centerpieces of more cohesive neighborhoods. In all neighborhood events, there is an abundance of food, music and theatrical entertainment.

Bridging the gap: Collaboration to maximize effectiveness

The Lehigh Valley is home to a number of coalitions, partnerships and task forces with similar missions. It has been challenging to avoid duplication and to achieve the ideal of collaboration in efforts that either arise from the community or are stimulated by funding streams that often do not communicate with each other on the state or federal level. By applying organizing strategies at all levels of the community, we strive to collaborate with appropriate coalition efforts to maximize our effectiveness. Following are several examples of this.

Currently, ALERT plays a key role in two local applications of the **Communities That Care** (CTC) process, based on Hawkins and Catalano's Social Development theory for preventing youth substance abuse and violence. The CTC process is promoted through the Governor's Partnership for Safe Children, and administered and funded through the Pennsylvania Commission on Crime and Delinquency. ALERT provided an organizing consultant to Northampton County in 1997 to formulate the planning and implementation grants that ultimately resulted in a CTC initiative concentrated in Easton. In 1999, we began the process with the city of Bethlehem, its Health Bureau, the Bethlehem Area School District and another community coalition, the Bethlehem Partnership for a Healthy Community.

In 1996, ALERT successfully competed for a three-year **Community Coalitions Demonstration Grant** from CSAP. This led us to collaborate with two other local coalitions—Build the Peace (a violence prevention effort) and the Coalition for a Smoke-Free Valley (see Chapter 12)—on joint projects that also involved the health care community. In 1997, with support from the Robert Wood Johnson Foundation, the Pool Trust and Lehigh Valley Hospital, ALERT and the Coalition addressed policy issues related to alcohol and tobacco use among youth.

In 1997, ALERT wrote a proposal to the U.S. Department of Justice for a two-year grant from the **Community Oriented Policing** (COPS) Office to establish the Pennsylvania Regional Community Policing Institute. Its purpose was to provide training on community policing to law enforcers and residents of a five-county area. The institute was a collaborative among Pennsylvania State University, the Bethlehem Police Department and ALERT. When the original grant funding expired, we helped the institute begin a year of targeted work on Community Policing to Reduce Domestic Violence, in partnership with Lehigh Valley Hospital.

In 1997, ALERT participated in site visits by the Robert Wood Johnson Foundation in support of Lehigh University's effort to join the foundation's **"A Matter Of Degree"** program. This five-year program aims to reduce high-risk drinking. Ultimately, ALERT became a contracted partner of the university as it sought to involve the Bethlehem community in this effort. An ALERT organizing consultant, working with key constituents she identified, stimulated an eventual ban of grain alcohol from state store shelves. Similarly, ALERT functions as a regional coordinator for underage drinking prevention initiatives spearheaded by the Pennsylvanians Against Underage Drinking coalition (another Robert Wood Johnson Foundation effort, with program assistance from the American Medical Association).

Testimony to community organizing

ALERT has learned many lessons about community organizing as a primary strategy of coalition-building to address substance abuse. Our work has consistently required flexibility in developing action plans in partnership with the community. More often than not, the objectives in a grant proposal have had to be altered to reflect the ongoing planning that is critical to ensuring meaningful and productive work. And we have modified the organizing team repeatedly to keep pace with community need.

Ultimately, our primary lesson was this: That success hinges to a great degree on the individuals who do the work. ALERT has engaged the services of a variety of people who have effectively built strong, long-lasting relationships among diverse constituents. In selecting the organizing team, our program manager for community organizing has shown a shrewd ability to identify the right people for the job. Several former members of the team have benefited professionally from their experiences as ALERT consultants, going on to leadership positions with coalitions in California and New Jersey as well as locally.

Perhaps no story captures the essence of community organizing—as the ALERT Partnership sees it—as well as the following example.

In 1994, ALERT engaged a neighborhood activist from Allentown, who worked first in Easton and was transferred two years later to Bethlehem. The reason we brought this woman onto the organizing team was the experience she and her husband had had in forming a grassroots group to respond to the sharp decline in their neighborhood. She is a woman in her sixties who never attended college and cannot quote community organizing theory or submit detailed activity logs. She joined ALERT's diverse team of organizers and was coached by those who knew the theory.

Shortly after her arrival in Easton, the organizer befriended a disabled housewife who had sought ALERT's assistance for her declining neighborhood. The organizer became a mentor for the housewife. Not a day went by without the two speaking on the phone about community happenings. Both women traveled to Washington for a national anti-drug coalition conference, where they met the President, participated in workshops and brought home stacks of prevention materials. When the organizer transferred to Bethlehem, she left behind a woman who took all she had learned and herself went to work tirelessly for her community.

The organizer, by virtue of her association with ALERT, grew to enjoy close working relationships with most government officials in the Lehigh Valley. After she had worked in Bethlehem for three years, we were forced to terminate her contract due to budget constraints. The neighborhood leaders voiced their frustration at losing her to all who would listen. The commissioner of police, hearing their concerns, sought approval from the City Council to hire her as a community liaison for the police department. Currently, she works for the city on behalf of the neighborhoods.

ALERT remains committed to furthering neighborhood-based problem solving, by fostering understanding of community organizing as a viable technique to improve the health of the Lehigh Valley.

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The Coalition for a Smoke-Free Valley

JEANNE FIGNAR, AAS, AND ALICE J. DALLAPALU, MPA

Community Coalition Building

The seeds for the Coalition for a Smoke-Free Valley were sown in summer 1988 when Lehigh Valley Hospital polled its region regarding perceived health problems, using a social reconnaissance survey funded by the Dorothy Rider Pool Health Care Trust. The interviews established that most residents ranked cigarette smoking high on their list of community health problems. Based on this, the hospital's Community Health Division wrote a grant proposal requesting funds to develop a community coalition to reduce smoking prevalence. The Coalition for a Smoke-Free Valley (CSFV) secured its initial three-year funding in autumn 1988 from the Pool Trust and the Henry J. Kaiser Family Foundation.

The key strategy proposed was to increase our community's problem-solving capacity by developing a community coalition. In 1990, CSFV collected baseline data on smoking prevalence and existing community anti-smoking resources. In the survey, we used the National Cancer Institute's COMMIT protocols; one NCI official, at that time, called our results "the most comprehensive data set on smoking in any U.S. community." The 11 sectors surveyed were: adults 18 and over (through a random direct-dialing telephone survey); worksites, hospitals, school districts, public and private elementary and secondary schools, community organizations, physicians, dentists and administrative office managers (through a modified paper survey); and ninth-grade youth through school classrooms using a paper and pencil survey.

Using the data gathered, we planned our future activities with emphasis on community involvement. Early efforts included developing a leadership steering committee and three major action groups led by volunteer chairs. We also helped establish Nicotine Anonymous support groups in Allentown and Bethlehem; the Allentown group continues to exist 10 years later.

The action groups focused on three major areas: health care issues, smoke-free worksite policies and youth smoking prevention. The groups evolved over the first five years into committees addressing specified goals and objectives identified through the survey results.

- **The Health Care Action Group** focused mainly on organizing and training health care workers and professionals to encourage, facilitate and support the goal of reduced tobacco use among adults.
- **The Worksite Action Group**, with assistance from staff, consultants and the Communication Committee (see below), developed and distributed *Working It Out...Planning a Smoke-Free Workplace*. This project integrated legal requirements and marketing concepts to effectively help employers implement laws regarding smoke-free work environments. It was a model of how to apply community expertise to public health goals, resulting in a high quality outcome with broad local ownership.

Jeanne Fignar, AAS, Grant and Research Coordinator, Coalition for a Smoke-Free Valley, Allentown, Pennsylvania, Department of Community Health and Health Studies.

Alice J. DallaPalu, MPA, Executive Director, Coalition for a Smoke-Free Valley, Allentown, Pennsylvania, Department of Community Health and Health Studies.

- **The Community/School Action Group** developed *A Guide to Becoming a Smoke-Free School* in cooperation with the Lehigh Valley unit of the American Lung Association. An attempt to significantly reduce children's exposure to environmental tobacco smoke in schools, the guide was distributed to public school districts and one diocesan school. In 1990, 91% of districts reported having a smoke-free policy, but only 53% prohibited smoking on school property. After we distributed our manual, all 17 public school districts adopted no-smoking policies. CSFV provided consultation and technical assistance to more than two-thirds of the districts to help them either pass a smoke-free policy or strengthen an existing policy.

Following are the other major activities of CSFV's early years:

- In 1993 the Communication Committee initiated an annual media program to enhance community awareness about tobacco issues. The goal was to hold a public-awareness event every month for the next two years; we achieved this goal, in the process creating positive and supportive local media relationships that remain today.
- In 1995 we completed a Tobacco Prevalence and Attitudes Research Study using the same community sectors and COMMIT protocols as in 1990 for purposes of comparison. (Results are discussed later in this chapter.)
- In 1995 we developed a five-year Strategic Plan based on the 1990/1995 data results and on current tobacco programming in other states. The following three goals became the driving force of our work in the years since 1995. Each goal had measurable objectives; all CSFV programs include an evaluation component to measure program effectiveness and help us improve.

Goal I - Prevent Youth Tobacco Use

Because CSFV recognizes that effective prevention efforts must go beyond the school setting and involve broader segments of the community, we mobilized community groups, schools, media, businesses and health care organizations in collaborative and innovative youth smoking prevention projects. It is also necessary to consider environmental factors and develop creative programming to address them. Following is a summary of our achievements to date toward Goal I:

- **SMOKE FREE KIDS WEEK!** is a community-based project held each year in early spring. The project has grown dramatically since its inception: from 3,800 youth in 1992 to more than 45,000 in 2000 (representing 71 schools and 37 youth organizations). It is an example of community organizations, businesses and the media joined in partnership for a common purpose—preventing children from starting to smoke while encouraging their parents to quit. One event is an anti-tobacco drawing contest involving children from youth organizations and local school districts. Prize-winning drawings are used in advertising and educational materials.

Education Programs for Children

Individual-root level causes of tobacco use by young people include low self-esteem, low self-satisfaction, low social confidence, high anxiety, low assertiveness and an impatience to assume adult roles. CSFV addresses these causes in the prevention programs YUCK! and TIP (see below), while also recognizing that children are also influenced by environmental factors, like tobacco industry marketing strategies:

- **Youth Understand Cigarettes Kill! (YUCK!)** is a smoking prevention curricula for students in grades 4, 5 and 6. Based on recommendations from the Surgeon General's Report of 1994 and on the most effective programs evaluated to date, YUCK! focuses on social factors that influence smoking onset; refusal skills; short-term consequences of tobacco use; and understanding tobacco company marketing. In developing the program, we included training and support for school personnel who would be implementing it. YUCK! is distinctive in that it begins in fourth grade, at least one year earlier than other identified curricula. CSFV pilot-tested each of the grade curriculum and continued for two more years. Our consistent conclusion: that this is a sound edu-

cational tobacco prevention program.

- **Tobacco Intervention Project (TIP)** responds to the need, identified in our 1995 data study, for intervention programs for middle school "at risk" students. We followed the same process we had used for YUCK! to create and pilot-test this program, and it too includes training and support for school personnel. TIP is a secondary intervention program designed to provide tobacco information and life skills training in a small-group, multi-session format. It is targeted to youth who are experimenting with or at heightened risk for tobacco use—for example, those with family members or friends who smoke.

CSFV also serves as a facilitator for educational and training opportunities with existing agencies. Our purpose is to expand and integrate community services, in the process reducing program and staffing costs.

Education Programs for Teens

Teens are pressured to smoke by their peers and by advertising. To successfully resist, they need facts about the tobacco industry, the health hazards of secondhand smoke, the unattractive effects of tobacco use, and the difference between addiction and free choice. Lehigh Valley teens identified these needs in 1994 to the ATAK (Alcohol and Tobacco Advertising to Kids) committee, a joint endeavor of CSFV and the ALERT Partnership (see Chapter 11). They also emphasized the importance of peer education in getting the word out to friends and classmates.

In late 1994, ATAK sponsored the first-ever "Teens as Teachers" workshop. More than 80 students from 10 Lehigh Valley school districts attended the all-day training, developed by the Americans for Nonsmokers' Rights Foundation. Workshop participants then used their new skills in prevention efforts in their school districts. One set of students, for example, made a presentation to their school board urging a stricter adherence to the district's smoke-free policy (including enforcement provisions and fines for students who smoke on campus). The changes that resulted from their presentation eliminated smoke-filled student bathrooms within two years. In 1998, CSFV reviewed the American Lung Association's program "Teens Against Tobacco Use," which is basically identical to Teens As Teachers. We switched to the Lung Association's version because the TATU program is universally used in Pennsylvania.

The Effort to Limit Access

Although it is now illegal in all states to sell cigarettes to those under age 18, children and adolescents have easy access to tobacco products. In some communities, children can purchase cigarettes 70-80% of the time over the counter and 90-100% of the time through vending machines. Each year, in the U.S., merchants illegally sell to minors 947 million packs of cigarettes and 26 million

Commentary

by Alice J. Hausman, Ph.D., M.P.H.

The Smoke-Free Valley initiative is a model for addressing behavior and social change through multiple levels of intervention, from individual treatment to policy and advocacy. This is a truly comprehensive program. Importantly, this is a case where the vision was clearly defined by the problem and the desires of the participants – not the funding stream. Too often, program strategies are dictated a priori or modified to fit what current RFP's are requesting.

containers of smokeless tobacco. These products are worth $1.26 billion, and they generate $221 million in tobacco profits.

Since restricting youth access to tobacco is deterrent in preventing smoking, CSFV has played an active role in local legislation related to youth access and in education and enforcement efforts to insure merchant compliance with state regulations. For example, we worked with the Bethlehem Health Bureau conducting annual merchant compliance checks. In cooperation with a youth organization, we designed a Merchant Education Packet distributed to all Lehigh Valley tobacco vendors to encourage compliance with tobacco age-of-sale laws. Five more municipalities have now been trained to initiate compliance checks in their communities and we work closely with DARE (Drug Abuse Resistance Education) officers to educate merchants and enforce youth access laws.

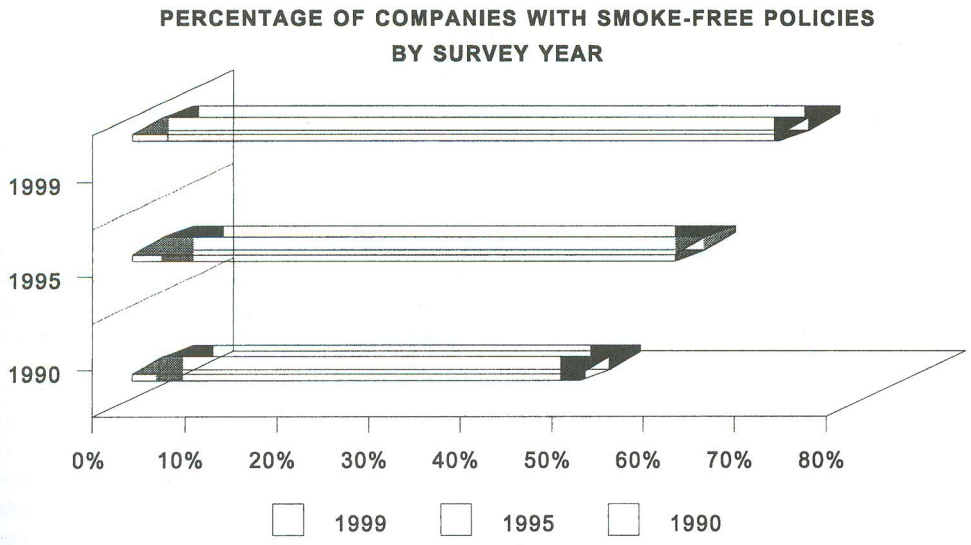
Goal II - Restrict smoking in public places

When smokers light up in public, the effects are detrimental not only to their own health but to all those surrounding them, especially children. Secondhand smoke, or Environmental Tobacco Smoke (ETS), is a toxic combination of the smoke exhaled by the smoker and the smoke that drifts from the lit end of the cigarette. It contains more than 4,000 substances, many of which are dangerous poisons and carcinogens. ETS pollution will cause an estimated 53,000 deaths this year, more than the number caused by all traffic accidents.

Since the U.S. Environmental Protection Agency (EPA) released its report on ETS in January 1993, many national and local initiatives have succeeded in restricting smoking in public places, including airlines and interstate buses. CSFV has supported and provided technical assistance to local efforts to restrict smoking in schools, public places, government buildings and worksites ever since 1991, when our Worksite Action Group designed a policy guide.

Working It Out: Planning a Smoke-Free Workplace (described on page 1) was developed to assist in policy development and to provide treatment resources for employers to offer employees. Since then, CSFV has distributed more than 25,000 of the manuals; and our Smoke-Free Business Honor Roll—a list of businesses providing smoke-free environments for employees and customers—totals more than 1,100.

To assess smoke-free business policies and ascertain the number of businesses that offer smoking-cessation employee benefits, CSFV completed a worksite survey in 1990 and repeated it in 1995 and 1999. We believe that increasingly restrictive workplace smoking policies have played a major role in the significant, documented decrease in cigarettes smoked per day by Lehigh Valley smokers. In 1990, only 18% of 18- to 25-year-old smokers consumed fewer than 10 cigarettes a day; in 1995, 27% of them were in this category. Similar improvements were documented in all age groups. In addition, the number of worksites with totally restrictive smoking policies increased from 49% in 1990 to 71% in 1999. (See chart)



CSFV's goal was to have 1,000 business sites on the Smoke-Free Business Honor Roll by the year 2000. We reached this goal in December of 1999—and we did it despite the Pennsylvania Clean Indoor Air Act, which includes a preemptive clause barring municipalities from passing stronger ordinances than the Indoor Air Act itself (and this is an extremely weak and outdated law). However, our 1999 worksite study clearly indicates that voluntary policies have plateaued. As a state, we need to work toward eliminating the preemptive clause.

We developed the following three programs over the past decade to attack the public health hazard of ETS:

- **Smoke-Free Business Awards** – This voluntary program to encourage businesses to adopt smoke-free policies. Those who do gain a place on the Smoke-Free Business Honor Roll. As mentioned above, 71% of Lehigh Valley businesses have smoke-free policies as of 1999. We are now refocusing this program on small businesses, especially restaurants.
- **Smoke-Free Restaurant Program** – This program encourages restaurants to adopt a smoke-free policy and supports them through promotional efforts like the Smoke-Free Restaurant Guide. Currently, 20% of Lehigh Valley restaurants are smoke-free; our objective is to increase this number by 5% annually.
- **Tobacco-Free Pharmacies** – This joint venture with local, independent pharmacy owners awarded certificates to those who agreed not to sell tobacco products. Thirteen local pharmacies participated in the program.

Goal III - Reduce Adult Tobacco Use

Appropriate counseling from health care providers is a vital resource in helping adults quit smoking. The national Healthy 2000 objectives reflect this: one objective seeks to increase the proportion of primary care providers who routinely counsel patients about tobacco use cessation and other cancer risk factors.

To address this objective, CSFV expanded a program called *The Fifth Vital Sign*. It consists of four segments for specific audiences:

- How to Help Your Patients Stop Smoking (for physicians)
- How to Help Your Patients Stop Using Tobacco (for dentists)
- Every Smoker, Every Time (for nurses and allied health professionals)
- Clean Air for Healthy Children (for prenatal health care professionals)

Data from our 1995 study underscored the need to expand *The Fifth Vital Sign*. Only 53% of physicians and 44% of dentists surveyed reported having a system in place to routinely advise smoking patients to quit. At the same time, more than two-thirds of smokers surveyed (69%) reported that they would try to stop smoking if told to do so by their physician.

In other related activities, CSFV responded to requests from area hospitals for technical assistance in developing smoke-free policies for patients, other customers and staff. The hospitals worked with us on patient/staff cessation programs. And as mentioned earlier, we founded Nicotine Anonymous groups to provide longer-term smoking cessation support. One group is still going; we promote its meetings through advertisements.

Partnerships and Results

CSFV's successes are largely attributable to strong community buy-in, as evidenced by our active membership. More than 80 volunteers—representing schools, community organizations, worksites, health care providers and media—have helped establish and implement our programs. And local businesses have been valued partners, helping promote our programs and events through advertisements and merchant donations to event participants. Finally, media coverage has been thorough and favorable, building on our efforts to disseminate research results and other information in easily understandable, user-friendly formats. CSFV today is as a well-used local resource for tobacco control information, commentary and perspective.

The results of all this productive staff/volunteer collaboration have been widely recognized, which in turn has opened new doors for CSFV.

Awards/recognition

- The EPA's regional administrator presented CSFV with a Certificate of Appreciation for our achievements in the workplace, especially restaurants.
- The Pennsylvania Department of Health and the Coalition for a Tobacco-Free Pennsylvania have recognized CSFV for our merchant education and youth access programming, and for our legislative and policy expertise.

Statewide, national and international activities

- We have provided consultation and technical assistance to the Community Coalitions for a Tobacco Free Youth project, the Pennsylvania Tobacco Prevention Network (PTPN), and the state health department's Bureau of Drug and Alcohol Programs.
- With PTPN we helped promote "Stop the Sale—Prevent the Addiction," a program involving local merchants, health bureaus, youth, the state health department and CDC's Office on Smoking and Health.
- Through PTPN's mini-grant program, we took part in regional collaboratives on tobacco prevention through the state health department's District Health Offices. We also coordinate local teens attending the annual PTPN Youth Conference.
- Our brochure *Tobacco—The Gateway Drug*, developed with the Bethlehem Police Department's DARE program, has been distributed nationwide through CDC's Office on Smoking and Health as an example of community collaborative efforts on tobacco education.
- In 1993, CSFV assisted Allentown's Israeli sister city, Ma'alot, with technical advice and information on organizing community tobacco coalitions.
- Our staff have presented papers or posters at 11 state and national conferences, including the

American Public Health Association (1996 and 1997) and the Pennsylvania Public Health Association (1995, 1996 and 1997).

- In 1996, our executive director gave a presentation on the Smoke-Free Business Awards program at the 1996 National Teleconference on Clean Indoor Air Policy hosted by the CDC and Americans for Nonsmokers Rights, and testified at a congressional briefing on the impact of tobacco advertising.
- Also in 1996, CSFV was Pennsylvania's representative in planning (with New Jersey and New York) a tri-state conference on Community Prevention Initiatives—"The Courage to Challenge." Some 200 addiction treatment and public health professionals attended the conference.
- CSFV has offered Nicotine Dependence (an 8-hour workshop promoting the integration of nicotine dependence into addictions treatment and other behavioral health care practices) twice a year in collaboration with the state Bureau of Drug and Alcohol Programs.
- In August of 1986, the White House announced the FDA's regulations regarding tobacco and youth. CSFV was invited to the ceremony in Washington, D.C.

Advocacy Partnerships

CSFV has long emphasized media and legislative advocacy as an integral part of comprehensive tobacco control strategies. In 1996, CSFV and the ALERT Partnership received a joint planning grant from the Robert Wood Johnson Foundation and the Pool Trust to examine youth policy issues related to tobacco and alcohol in the Lehigh Valley

We also collaborated with ALERT to provide physicians and their office staffs updated skills and information on the prevention, detection and referral of substance-abuse related problems. And together, we held breakfasts with state legislators to discuss alcohol and tobacco state and local policy issues. At the second legislative breakfast, eight candidates signed the "Tobacco Free Pledge" committing themselves not to accept donations from any tobacco company.

With technical assistance from CSFV and ALERT, the City of Allentown was successful in passing an ordinance restricting outdoor tobacco and alcohol advertising. It banned all billboards on these themes within 500 feet of schools, playgrounds, recreation centers, churches and day care sites in May, 1998, six months before the tobacco industry's Master Settlement Agreement with 46 states was signed.

Among our other community collaborations, CSFV has:

- helped the Partnership Health Plan's Advisory Group develop four targeted community needs identified in the Community Health Assessment of 1993;
- assisted the Allentown Health Bureau in the design of a five-year strategic plan addressing public health issues for Allentown and Lehigh County; and
- served on many local and state advisory groups including Children's Coalition in the Lehigh Valley, Maternal Substance Abuse Task Force, Clean Air for Healthy Children Advisory Committee, Partnership for Community Health in the Lehigh Valley Advisory Board, and the Coalition for a Tobacco Free Pennsylvania.

Looking Forward

In the summer of 1999, CSFV undertook a third strategy planning process. With the assistance of an external evaluation consultant, we conducted a Key Informant Study of 41 community leaders on tobacco advocacy issues. We also completed the data and analysis of the 1999 Worksite Survey Data Study, with comparisons to 1995 and 1990.

CSFV's Steering Committee reviewed and revised our vision and mission statement. Using needs identified in the surveys as well as committee member input, we revised all of CSFV's goals and objectives to include advocacy initiatives beginning in July 2000. We will continue implementing and revitalizing existing programs and vigorously reaching out to community members who are not yet participating with CSFV to serve our community and reduce tobacco use.

Tools for Engaging Hospitals and Health Systems in Community Health

ROBIN WILCOX, MPA

Improving the health of communities is fundamental to the mission and values of health care. Increasingly, hospitals and health systems are reconnecting with the communities they serve and becoming active community members, working with others to improve the health and quality of life for all in the community. Health care provider organizations have many important roles to fulfill in improving the health of their communities and managing health status. Given the changing health care environment, it is increasingly important for hospitals' and health systems' future that they incorporate community health into their operational, strategic and business plans.

The improvement of a community's health and the development of healthy communities however, is not a short term investment or a quick fix. Community health efforts require earnest, long term, and dedicated commitment. Some hospitals/systems are more enthusiastic about investing in their communities than others. There are many reasons given concerning why hospitals and health systems do *not* focus more energy and resources towards the improvement of the health and quality of life of their communities. Besides limited time, staff and financial resources, some hospitals indicate that the community does not understand the health care business. Some say that there is a disconnect between the community's issues and the hospital's role.

The Institute for Healthy Communities, an affiliate of the Health Alliance of Pennsylvania, has developed a set of three products designed to encourage hospitals and health systems to specifically and actively address the health of the communities they serve. The first is a policy statement that describes healthy communities activities and challenges hospitals and health systems to engage in efforts to improve their communities' health. The second is a report that presents the perspectives and opinions of hospital and health system chief executive officers (CEOs) whose hospitals/systems have demonstrated a commitment to community health. The third product is a tool for hospitals and health systems to use to assess the level of their commitment to their communities' health. These three products are described below.

The *Community Health Policy of the Institute for Healthy Communities* is a teaching tool. It introduces the concept of healthy communities and provides definitions of "community," "health" and "healthier communities." The Policy describes the activities involved in creating a healthier community and sets forth the roles of hospitals and health systems. It stresses the concept that a health care provider is one of a number of members of the community; i.e., the work can not be seen as "we-them" activity, but must be as "us." The Policy recommends that a broad cross section of the community be involved, consensus planning and implementation be employed, and comprehensive and multi-dimensional approaches be used. Finally, the statement proposes six activities that hospitals and health systems should put into practice: (1) use multidimensional approaches to develop an environment that promotes health; (2) adopt health status improvement in the mission statement and the operational, business and strategic plans; (3) collaborate with other health care providers; (4) develop partnerships with other members of the community; (5) work with community members to develop community assets, capacities and leadership; (6) provide leadership in developing sustainable infrastructures in the community for improved health status.

One of the strengths of the policy is that it was originally adopted by the Board of the Delaware Valley Health Care Council of HAP. This means that hospital/system CEOs endorsed the policy. Their endorse-

Robin Wilcox, MPA, Vice President, The Institute for Healthy Communities; President, Pennsylvania Public Health Association

ment goes along way in convincing other hospital and health system CEOs of the important role they have in improving their communities' health.

The second document, also developed to encourage hospital and health system CEOs to invest in their community, is a report called *CEOs Talk About Community Health: Confronting Challenges To Improve Community Health.* This report presents the perspectives and opinions of ten Pennsylvania hospital or health system CEOs who have demonstrated leadership through a strong commitment to community health improvement. These CEOs have implemented long term programming, dedicated staff resources and developed working relationships with their communities. The Institute selected CEOs to create a sample that was representative of rural, suburban and urban hospitals; small hospitals and large systems; and western, central and eastern Pennsylvania. Some of these organizations collaborate with their communities to develop community programs. Others are a partner in and supporter of a community health partnership.

In the report, the CEOs described their community health initiatives as critical to their organization and its future. They said that community health efforts provide mechanisms for communication, collaboration, building community support and accessing contributions. Above and beyond those factors, they stated that community health improvement is important because it is the mission, the purpose, and the reason for being of their hospital/health system. Many of the CEOs told of programs or services that were developed collaboratively with members of the community that not only benefited the community but also the hospital. These programs were implemented more efficiently through cooperation. They also indicated that their level of investment was manageable and that the process enabled them to access other community resources.

The intention of developing this report was to better understand and to communicate the perspectives of hospital/health system CEOs who support healthy communities and who make organizational investments in efforts to improve the health of the communities they serve. This report was developed to share the knowledge, experiences and opinions of these ten CEOs with other hospital and health system CEOs.

The third product that the Institute for Healthy Communities has developed (in cooperation with the Deleware Valley Healthcare Council of HAP) to specifically assist hospitals and health systems is *The Health Care Organization Community Health Self-assessment Tool.* This Self-assessment Tool is an implementation companion to the Community Health Policy described above. It provides a mechanism to encourage the consideration of various methods to implement a commitment to community health. This tool addresses both the level of commitment to healthier communities and the operational implementation of that commitment.

The *Health Care Organization Community Health Self-Assessment Tool* is intended to prompt reflection and discussion. It is a list of items and potential activities presented to help health care organizations develop a broader perspective concerning their community health commitment. The list helps to identify patterns of activities where a provider organization is actively engaged in efforts to improve the communities' health and it highlights opportunities to build and strengthen the organization's commitment to community health. This tool is not intended to be used as a comparison of one health care provider organization against another, nor is it a list of activities all of which an organization should have in place. It is not a survey or report card. It is for an organization's voluntary, internal use.

The Self-assessment Tool was designed to be flexible and can be used in a variety of ways, appropriate to the specific hospital/health system. For example, the community health or outreach staff person of a hospital could fill out the form to consider other types of activities that could be developed. A senior manager could fill it out before discussing the results with other staff. Staff across organizational lines could be asked to complete the form and then the results could be discussed in a group. An organization could complete the form annually, to track changes. One hospital gave the form to their community partnership and asked its members to complete the form as they viewed the hospital.

These three products were developed and are provided to hospitals and health systems to not only encourage them to connect with their communalities, but also to provide guidance and ideas concerning how to improve the health status of their communities. Health care organizations need tools and methods to assist them to cultivate, integrate and institutionalize an ongoing organizational commitment to partnering with other community members towards creating healthier communities. These tools were developed to be useful to hospitals and health systems in developing, assessing and expanding their healthy community initiatives.

COMMUNITY HEALTH POLICY of The Institute for Healthy Communities

Health Care Providers and Community Health

Improving the health of communities is increasingly viewed as fundamental to the mission and values of health care. All health care provider organizations have important roles in improving the health of their communities and managing health status. It is increasingly important that they incorporate community health efforts into their operational and business strategies. Managing health status and improving the health of their communities are particularly important strategic initiatives for the future success of health systems' and hospitals' in a health care environment that is being shaped by a number of forces. These forces include the continuing growth in managed care, the necessity to control costs, the need to quantify community benefits, the public's perception of the health care industry and the threats that are facing our communities.

Risk Assumption – As managed care penetration continues to grow, financial risk will be shared to a greater degree by health provider organizations. Provider organizations must then be in the business of managing health status. It is important that provider organizations both know what the community's health concerns and health risks are and understand how to improve the population's health.

Cost Containment/Quality of Care – Demands to control health care costs and to manage medical care are encouraging provider organizations to ensure that the right services are provided at the right time, in the right setting. This translates into providing a continuum of care, from efforts to keep people healthy to long term care for people with chronic health problems. In some cases it may require an increased emphasis on preventive care and health education services where they may have previously been limited to marketing efforts. And it also means identifying and employing new ways to improve health among the general population of the community.

Community Benefits/Tax Exemption – As financially strapped local governments seek to broaden their tax base, Pennsylvania hospitals and health systems face continuing challenges to their tax exempt status. As a result, hospitals and health systems are not only making efforts to quantify their current benefits to their communities, they are seeking new ways to contribute to the community and to measure that contribution. Collaboration among community organizations increases the effectiveness of any one organization's efforts. In addition, the reporting of indicators of community changes are a logical measure of the impact of the efforts.

Public Perception – The public's negative perception of health care provider organizations is a growing concern among hospitals and health systems. A recent study conducted by the American Hospital Association[1] found that "today's hospitals have reached an important and defining crossroads in the nation's consciousness. The true 'identity,' motivations and priorities of hospitals and health systems are matters of serious public concern . . .." One of the report's conclusions is that

"the public wants and needs institutions that put value back into their communities, and will deal harshly with entities that they believe remove value from their communities and take dollars out of their pockets. In the public's mind, hospitals used to be, in some authoritative and important sense, more than the sum of their parts. Today's public is concerned that hospitals have become less focused on community need and in maintaining their historic place as part of the community infrastructure." A sincere and continuous commitment to listen to the community, work with the community and improve the health of the community will improve the public's perception of the provider organizations and help build the community's trust and support.

Threat to Communities – Communities are facing many economic and social threats. It is in the self-interest of health care provider organizations, as members of communities, to participate in ensuring that communities are vital, have robust economies and show strong prospects for the future.

Given the forces shaping the future of health care, health care provider organizations must pro-actively position themselves to ensure their future survival. "What looks like chaos in health care is really a radical change in orientation beyond treating ill individuals within the four walls of the hospital toward creating community health management systems that aim to improve the health and quality of life."[2] Health care provider organizations need to be leaders in creating sustainable infrastructures for community health.

In order to provide a framework for managing health status and improving the health of communities, definitions of **community, health and healthier communities** are presented below. Principles for effectively **creating healthier communities** are discussed and the **roles of health care provider organizations** in managing health status and improving the health of their communities are presented. Based on these discussions, a **policy statement** concerning health care provider organizations' responsibilities and recommended strategic actions is presented.

The Definition of Community

Health services can target a wide variety of population groups. The patient population includes those individuals who are currently receiving clinical services. A larger population group would also include "covered lives" or the population enrolled in a particular health plan. A still more inclusive and diverse category is the community.[3] Community health efforts influence the health of the community at large. The focus is to improve the health status of a population by working to create a healthier community in which a population can thrive and be productive.

The word community is often preceded by an adjective to describe sub-groupings of populations and organizations, e.g., the African American community, the Hispanic community, the public health community. While almost all community health interventions target a specific sub-grouping, the long term target is the community itself. For the purposes of community health, community is defined in its broadest sense: "All persons and organizations within a reasonable circumscribed geographic area in which there is a sense of interdependence and belonging."[4] When determining the parameters of a specific community, it is important to define the community boundaries from the perspective of those who belong to it, not from a perspective of an outsider. For example, a health care provider's primary market or service area is not necessarily a community: a service area may include several communities. Our community is where we live, work and play. Additionally, the delineation of the community must be inclusive of *all* who function there (education, business and industry, recreation, government, the media, spiritual organizations, human service providers, public health, residents, voluntary organizations – including healthy community committees and initiatives – *and health care provider organizations*). The provider organization is not separate from the community; it is a member of the community. The perspective therefore, is not "we – they," but "us."

The Definition of Health

The World Health Organization defines health as "the extent to which an individual or group is able, on the one hand, to develop aspirations and satisfy needs; and, on the other hand, to change or cope with the environment. Health is therefore seen as a resource for everyday life, not the objective of living; it is seen as a positive concept emphasizing social and personal resources, as well as physical capacities."

According to the United States Surgeon General, health is determined 20 percent by genetics, 20 percent by the natural environment, 10 percent by the medical system, and 50 percent by health behaviors, e.g., tobacco use, physical activity, nutrition, etc. A study conducted by the U.S. Department of Health and Human Services[5] using 1990 data, found that approximately half of all deaths that occurred could be attributed to non-genetic or "external" factors. Rather than looking at the leading causes of death, such as heart disease or cancer, the study determined the "actual causes" of those deaths. Viewed in this way, tobacco use was the actual cause of 19 percent of the deaths in 1990; diet and activity patterns caused another 14 percent; and alcohol another 5 percent of the deaths that year. Fifty percent of the deaths that year could be attributed to these and other non-genetic factors (e.g., firearms, sexual behavior, etc.) "When these (factors) contribute to deaths, those deaths are by definition pre-mature and often preceded by impaired quality of life."[6] Further, "behavior change is motivated not by knowledge alone, but also by a supportive social environment and the availability of facilitative services."[7] The final conclusion of the study is that "if the nation is to achieve its full potential for better health, public policy must focus directly and actively on those factors that represent the root determinates of death and disability."[8] This is guidance that is not only appropriate for public policy, but for any organization which wishes to improve the health of its communities.

Healthier Communities

Health care organizations, public health, preventive health care and human services historically have targeted health promotion services and programs to a selected "sub-community" or "sub-population" (e.g., the low-income, the African American population, women). The intent has been to improve the health status of that population by focusing on a specific risk factor, morbidity or cause of mortality with targeted interventions. For example, one program may focus on tobacco use, another on diet, another on exercise, and another on screening. The high costs, time required and limited measurable impact of those interventions have historically frustrated organizations which fund and implement them. Healthier communities' strategies adopt a broader perspective. Heart disease, for example, is impacted synergistically by all of those health risk factors (tobacco use, poor diet, sedentary life style and lack of early screening). Efforts directed at one risk factor have limited impact that can not be causally related to the improvement or worsening of the health status of a population.

"The traditional targets for interventions have been specific diseases or behaviors. The field model[9] of determinates of health suggests consideration of a wider array of targets. . . A multidimensional approach would be required, focusing on education, social and community involvement, family preservation, and improved social networks. . . The multidimensional approach may be unfamiliar to health professionals because it is new and relies on partnerships with people from fields beyond those traditionally encompassed by a medical model. It is, however, consistent with the field model and may provide expanded opportunities for performance monitoring and improving the community's health."[10] Rather than focusing on sub-populations and specific health status issues with targeted program interventions, the most sophisticated healthy community efforts focus on the factors in the community that create health and on the environment in which those factors can be developed and strengthened.

"Nationwide, people concerned with their community's health have found that the essential building blocks of good health – such as strong families, good jobs and education, to name a few – lie largely outside of the health care system."[11] Other building blocks of health include social networks, economics, social conditioning, safety and a clean environment. Health is then, to a large degree, a function of choices provided to the members of a community and of their actions or behaviors in response to those

choices. A healthy community will provide opportunities for healthful choices to the members of that community and will provide norms and support for the choices that allow them "to develop aspirations and satisfy needs; and . . . to change or cope with the environment" (as stated by the World Health Organization).

Creating Healthier Communities

Health is a result of the choices, actions and behaviors that are provided, encouraged, and supported in and by the community. Health status then, can most effectively be impacted on by changing or sustaining characteristics of the community. This requires comprehensive approaches involving a broad cross-section of the community. "A basic premise of the healthy communities movement is that well-informed people, working together in an effective process, can make a profound difference in the health and quality of people's lives within communities."[12] Further, "the single defining feature of a healthy city or community is that its citizens, in all their various roles, have joined forces to pursue positive change."[13]

While every community is unique and has its own history, characteristics, and resources, there are community health process designs that have common elements for health care organizations and their communities to work to create a healthier community and improve the health status of its members. In the last twelve years, the World Health Organization, and in the last nine years communities in the United States, have developed and tested healthy communities processes and models.

Healthy communities efforts or community-based health status improvement projects begin with the notion that every community has individuals, institutions and organizations and public, private and not-for-profit sectors which have vested interests in the health and productivity of their community. The healthy communities movement "places equal emphasis on the process of promoting change as well as the ultimate consequences of that process."[14] "A hallmark of the healthy communities movement is its consensus-based planning process."[15]

Further, every community already has resources that can be used in different and new ways to impact on the health of those who live, work and play in the community. Sectors of the community, working together can increase the impact of their resources and expand the capacity of the community to work internally to improve its health status. "The key to neighborhood regeneration, then, is to locate all of the available assets, to begin connecting them with one another in ways that multiply their power and effectiveness . . .."[16] Additionally, when community organizations are working together to coordinate their existing resources, they are in a better position to access additional outside resources where needed for long term or more costly initiatives.

The processes and methods involved in community consensus based health status planning and in identifying and utilizing resources include: partnership development, health status and asset assessment (including current community initiatives), priority setting, project development, consensus development for indicators to measure progress, intervention implementation and evaluation, and resource development, not necessarily in that order. Some communities begin with a technical assessment using data for indicators of health status. Others begin with "projects required to meet pressing needs obvious to everyone – projects that are most likely to give quick success and measurable results."[17] Some communities conduct a formal assessment at the same time as they develop interventions, with mutual supportive interaction of the two efforts. Each of the elements listed above can be implemented in various sequences, are conducted in different ways and developed with various levels of resources, unique to each community's character and resources.

Once begun, these activities must be continuous and ongoing. The history of public health has repeatedly demonstrated that short-term "quick fixes" do not impact on a population's long-term health status. Community infrastructures must be developed to ensure that there are mechanisms for continuous and sustainable community health improvements. The development of sustainable community health infrastructures can not be initiated or maintained without a high level of ongoing strong leadership.

The Role of Health Care Providers in Creating Healthier Communities

"As communities define their health needs more broadly – increased safety and a sense of community, for example – they rapidly move beyond providers' core competencies. Appropriate responses to these community needs are more akin to community development efforts than medical care. In fact, most hospital administrative staff and even most physicians know relatively little about how to organize a community to prevent teen pregnancies, to reduce gang violence or to tackle other profound social problems. Health care providers can contribute, however, by helping communities tackle the problems themselves and by forming partnerships with existing community organizations to provide support, resources, and expertise where they are truly relevant."[18]

Hospitals and health systems can not unilaterally improve the health of their community. In addition to providing health care, they must also think outside of the medical model and work with others to have a major and real impact. "Health care leaders can be catalysts. They have the unique opportunity to help motivate the community at large to make lasting improvements in community health status."[19] Community health leadership includes being the convener, organizer and motivator. The health care organization can supply the initial leadership needed to form a working partnership. The health care organization's role can change, over time, to encourage others to develop and provide community leadership. The health care organization must continue to be involved in the process by becoming a partner with other organizations and individuals committed to improving their community. The health care organization can also provide the technical assistance and expertise needed in many areas for the community to be effective. For example, the expertise needed to collect and analyze data to track the community's progress may be shared with the community through a partnership between health care planners and educational institutions. Staff of health care institutions may be able to provide the expertise to lead a community group through a process of consensus. Every health care institution has staff responsible for development who can lend assistance in seeking funding for specific initiatives.

The core proposition is that the health care provider organization can not only share expertise and resources with the community but, through leadership, also *share the responsibility and the work* of creating a healthier community. That is, the provider organization is not the only community member bringing resources to the table. A partnership requires that other community members and organizations also bring resources, leadership, responsibility and commitment.

Overall improved health status and a healthier community will not be effectively or efficiently achieved by focusing only on special populations, specific risk factors, morbidity or causes of mortality with targeted interventions. Improved health status and quality of life are inextricably linked. All sectors of the community – health care, human services, education, business and industry, spiritual, cultural and recreational, economic, government, media, voluntary organizations and the people who live, work and play – are a part of the equation for a healthier community. It is critical that the health care organization is in a position to be the catalyst and to be a member of communities that are working together to improve their quality of life and health status by creating a healthier community.

COMMUNITY HEALTH POLICY

The Institute for Healthy Communities (Institute) resolves that it is the policy of the Institute that health care provider organizations should incorporate, internalize and engage in work towards creating healthier communities. Health care provider organizations should develop, implement and participate in internal and external infrastructures for community health improvement including:

- Health care provider organizations should work with other members of their communities toward the development of an environment which provides opportunities for healthful choices and provides norms and support for healthful actions and behaviors. Multidimensional approaches (that include and impact on various community characteristics such as the safety, education, transportation, social supports, economic opportunities and good education) should be developed.

- Health care provider organizations should include healthy communities and health status improvement in their mission statements and should incorporate specific actions and commitments in their operational and business plans related to community health efforts. Health care provider organizations should develop an internal committee, structure of communication or community health program locus concerning the community health strategic and business plans.
- Health care provider organizations should identify common community health issues where "zones of collaboration" with other health care provider organizations can be developed that provide opportunities to more effectively improve health status and quality of life.
- Health care provider organizations should develop partnerships of (and with) the other members of their communities to share the responsibility, work and successes of creating healthier communities. Members of the community include, for example, schools, business and industry, recreation, government, the media, voluntary organizations, spiritual organizations, human service providers, public health organizations, residents and other health care provider organizations. To achieve this objective, health care provider organizations should:
  - identify and convene community leaders and members.
  - develop and support ongoing community committees, teams or partnerships dedicated to community health improvement.
  - work with members of the teams to develop a vision or mission, priorities for action and work plans for cooperative implementation.
  - in cooperation with their community team, develop mechanisms to inform and involve community members.
  - in collaboration with their community, develop community health progress measures, benchmarks or sets of indicators to measure changes and progress over time.
  - provide a consistent and continuous commitment to working with other members of the community to create a healthier community and improve the health status of community members.
- Health care provider organizations should work with their communities to identify and develop the communities' assets, capacities, abilities and leadership. Health care provider organizations should mentor emerging community leaders who can have a positive impact on their community.
- Health care provider organizations should provide leadership and commitment to the processes and methods required for community consensus-based health status improvement. Health care organizations need to be flexible and to understand that each community has its own unique history, characteristics and resources. Health care organizations should provide technical assistance, expertise, information and support where they are relevant to the communities' efforts. Health care provider organizations should be the leaders in developing sustainable infrastructures for healthier communities.

Footnotes

[1] American Hospital Association. 1996. *Reality Check: Public Perceptions of Health Care and Hospitals: 10*

[2] Russell, John A. 1997. "The Right Thing to Do – Has Become the Smart Thing to Do." Harrisburg, Pennsylvania: The Institute for Healthy Communities

[3] Sigmond, Robert M. 1995. "Back to the Future: Partnerships and Coordination for Community Health." *Frontiers of Health Services Management II (4): 5-36*

[4] Hospital Community Benefits Standards Program. 1989. *A New Certification Program for Hospitals*

That Meet High Standards of Community Service. New York City, New York: New York University

[5] McGinnis, Michael and William Foege. 1993. "Actual Causes of Death in the United States." *The Journal of the American Medical Association* 270 (18): 2207-2212

[6] McGinnis, 1993: 2207

[7] McGinnis, 1993: 2211

[8] McGinnis, 1993: 2211

[9] The report from which this quote was made explains that the field model includes functional capacity and well being as health outcomes. It also emphasizes general factors that affect many diseases or the health of large segments of the population, rather than specific factors that account for small changes in health on the individual level

[10] Weissman, Ellen, Ed. 1996. *Using performance Monitoring to Improve Community Health: Conceptual Framework and Community Experience: Workshop* Summary Washington, D.C.: Institute of Medicine, National Academy Press

[11] Norris, Tyler. 1995. "Creating the Building Blocks for Health." *Trustee* April: 16

[12] Norris, 1995: 16

[13] U.S. Public Health Service, Department of Health and Human Services, "Starting Points for Creating a Healthy Community.": 1

[14] U.S. Public Health Service, Department of Health and Human Services, "Starting Points for Creating a Healthy Community.": 1

[15] Norris, 1995: 17

[16] Kretzmann, John P., and John McKnight. 1993. *Building Communities From the Inside Out: A Path Toward Finding and Mobilizing a Community's Assets:* Evanston, Illinois, Northwestern University: 5

[17] Sigmond, Robert M. 1996. "Community Assessment or Action?: From Community Conflict to Synergy." *Health Progress* March-April: 64

[18] Coye, Molly J. 1995. "Healthier Communities and the Business of Creating Health." *Healthcare Executive* July/August: 7

[19] Norris, 1995: 18

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THE INSTITUTE FOR HEALTHY COMMUNITIES
An Affiliate of The Health Alliance of Pennsylvania

DELAWARE VALLEY HEALTHCARE COUNCIL
of The Hospital & Healthsystem Association of Pennsylvania

Health Care Organization Self-Assessment Tool

Attached is the Health Care Organization Self-Assessment Tool developed to assist health care organizations assess and strengthen their commitment to community health. The tool provides a mechanism to encourage the consideration of various methods to implement a commitment to community health. This tool addresses both the level of commitment to healthier communities and the operational implementation of that commitment.

In 1997, the boards of the Delaware Valley Healthcare Council of HAP and the Institute for Healthy Communities adopted a Community Health Policy which explains why community health is an important strategic direction for health care provider organizations and sets forth the roles and responsibilities of health care provider organizations in community health improvement. The Policy encourages hospitals and health systems to develop, implement and participate in internal and external infrastructures for community health improvement. The Policy specifically states that health care provider organizations should incorporate community health into their operational, business and strategic plans. The enclosed tool is provided to assist in the implementation of this Policy.

The enclosed tool is intended to prompt reflection and discussion. It is a list of items and potential activities developed to help health care organizations develop a broader perspective concerning their community health commitment. This tool is not intended to be used as a comparison of one organization against another, nor is it a list of all activities which an organization *should* have in place. It is not a survey or report card. It is for voluntary, internal use.

Health care organizations need tools and methods to assist them to cultivate, integrate and institutionalize an ongoing organizational commitment to partnering with other community members towards creating healthier communities. We hope this tool will be useful to you in evaluating and expanding your healthy community initiatives.

For assistance with this tool or any other community health communication, presentation, facilitation or other support needs, please contact Robin Wilcox or Alexa Knapp at 215-735-9695.

Health Care Organization Self-Assessment Tool for Commitment to Communities' Health Improvement

PURPOSE:

The Health Care Organization Self-Assessment Tool is provided to help you develop a broader perspective concerning your organization's commitment to community health. This tool will help you identify patterns of activities where you are actively engaged in efforts to improve your communities' health and it will highlight opportunities for you to build and strengthen your organization's commitment to community health.

USE:

This Self-Assessment Tool was developed for use by health care provider organizations, particularly, hospitals and health systems.

The tool was designed to be flexible. It can be used in a variety of way, appropriate to your hospital/health system. Potential ways of using this tool are listed on the reverse side of the tool. You may find other ways to employ this tool.

This Tool is for your internal use. It is not a rating, pass/ fail or otherwise scored evaluation tool. It is not a survey, to be completed and submitted to anyone.

BACKGROUND:

Please refer to the DVHC of HAP Community Health Policy while completing this self-assessment. The Policy specifically states that health care provider organizations should incorporate community health into their operational, business and strategic plans.

The Policy states that "*Rather than focusing on sub-populations and specific health status issues with targeted program interventions, the most sophisticated healthy community efforts focus on the factors in the community that create health and on the environment in which those factors can be developed and strengthen.*" The Policy encourages hospitals and health systems to:

1. *incorporate, encourage and engage in work towards creating healthier communities; and to*
2. *develop, implement and participate in internal and external infrastructures for community health improvement.*

Health Care Organization Self-Assessment Tool

WHAT THIS TOOL IS:

- a list of items and activities to encourage consideration of various methods for implementation of community health;
- a list to help assess: (1) your organization's commitment to healthy communities and (2) the operational implementation of that commitment;
- options/a guide to help you think about healthy communities;
- an internal assessment of your commitment to healthy communities; and
- a guide for policy development and strategic planning.

WHAT THIS TOOL IS NOT:

- a rating, pass/fail, report card or otherwise scored evaluation;
- a comparison of your organization against another health care provider organization; and
- a comprehensive list of healthy community activities all of which your organization should have in place.

POTENTIAL USES:

The objective of this tool is NOT to necessarily have every "we aggressively implement" box checked. The tool is to help you identify and then evaluate your organization's commitment to community health. This tool lists options that will help you think about healthy communities. After completing the questionnaire, look for patterns of activities and for opportunities to build and strengthen your organization's community health commitment.

There is no right or wrong way to use this tool. This tool could potentially be used by any (or all) of the following people in your organization:

1. A series of people across the organization can individually complete the questionnaire and then meet as a group to review each other's and the organization's internal commitment to community health;

-or-

2. The CEO can use the form to assess the entire organization's commitment to community health;

-or-

3. The Community Relations Director or other community health staff can utilize the information for future planning;

-or-

4. The trustees can review the form with the CEO and other staff to understand and assess the organization's commitment to community;

-or-

5. The organization can complete the form on an annual basis to determine an increase or decrease of commitment to community health.

COMMUNITY HEALTH ACTIVITIES	we aggressively implement	we implement	not sure	this is planned	this is not planned
MISSION					
My organization's mission statement includes the improvement of the health of the people and conditions in our communities.					
My organization has a formal community health program in place.					
My organization conducts a formal annual tithing program.					
STRATEGY					
The communities' health is an important element of my organization's strategic plan.					
My organization's board has adopted the DVHC of HAP/ Institute for Healthy Communities' Community Health Policy.					
Every board agenda includes at least one item concerning healthy communities.					
Board members receive, on a regular basis, healthy communities educational sessions.					
OPERATIONS					
My organization's operational plans include specific healthy communities activities.					
My organization's budget includes healthy communities line items.					
Healthy communities activities are implemented across my organization.					
Employees of my organization are assigned to work with community organizations.					
My organization encourages employees to volunteer with community organizations.					
My organization has developed an inventory of employees' informal relationships with members of the community.					
Health status improvement or work with the community is tied to performance evaluation and/or compensation.					
Collaboration with community members is incorporated into employees' annual objectives.					
There is an internal committee, communication structure or locus for community health in my organization.					
There is a full time staff person specifically assigned to healthy communities work and support of community partnerships.					

COMMUNITY					
My organization sees itself as a key member of community.					
The community sees my organization as an active, contributing member of the community.					
My organization has a consistent and continuous commitment to collaborating with other community members to create a healthier community.					
My organization listens to the community in order to identify community issues (health and quality of life).					
My organization shares its information and data with the community for better understanding and open dialogue.					
My organization collaborates with other community organizations to address non-health care community issues such as education, employment, transportation, etc.					
My organization has developed working relationships with voluntary health organization (e.g., Heart Association, Lung Association, etc.).					
My organization has developed working relationships with non-health related community organizations (businesses, community development organizations, educational institutions, etc.).					
My organization has a working relationship with the county health department (if one exists).					
HEALTHY COMMUNITIES PARTNERSHIPS					
My organization is an active member of at least one community-based community health/community development partnership.					
Employees of my organization are active partnership members.					
Trustees of my organization are active partnership members.					
The membership of the partnership is multi-sectorial (business, faith, transportation, etc.).					
The membership of the partnership includes community residents (who do not represent an agency).					
The partnership has developed a vision for the community.					
The partnership has convened the community to develop measures or indicators for community progress.					
The partnership has established priorities for action.					
The partnership is organized for action.					
The partnership is addressing community issues in new and creative ways.					
The partnership is building on assets of the community and community members.					
The partnership encourages community organizations to share resources and collaborate in new ways.					

The partnership is working to build the community's capacity to problem solve.					
The partnership is working to develop new community leaders.					
The partnership makes decisions through a consensus process.					
The partnership has developed mechanisms to communicate with the community at large.					
My organization contributes technical assistance, expertise, and information to partnerships and community groups.					
HEALTH CARE ORGANIZATIONS					
My organization has identified "zones of collaboration" in which we work with other health care organizations.					
My organization collaborates with other health care organizations on its health education and support programs.					
My organization collaborates with other health care organizations on its preventive health services (immunizations, screenings, etc.).					
My organization coordinates transportation services with other health care organization.					

R.W.

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